

A Treatise on Treatment.

Designed for the use of Practitioners
and Students of Medicine.

BY

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WITH CHARTS AND ILLUSTRATIONS.

THIRD EDITION.



Calcutta.

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To
Lt. Col. R. L. Dutt,

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This work is dedicated

IN RECOGNITION OF

**His Love of Science, Administrative
Ability, and Generous Liberality**

AND IN REMEMBRANCE OF

**Many Acts of Kindness shown
to the Author**

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PREFACE.

Far back many years when I was quite a novice in the practice of medicine, I well remember the sundry difficulties I experienced as such and in the first instance to meet the wants of the junior practitioner in his daily dealings with disease, the present volume is designed for publication. I have here elaborately followed those methods of treatment to which general consent or weighty testimony has given a *standard* place. Some of the articles were published occasionally in the periodical journals but all of them are re-written, re cast and re-arranged so that I am led to hope I have at length produced a work which may be looked upon as containing the latest, fullest and best practical information on the subject of treatment of disease, and now it is for the profession to accord a hearty or cold reception

In conclusion I have to thank my friend Srijut Nogendra Nath Dey for kindly going over the proof sheets.

J. L. Chandra



5, GOPEE KRISTO PAUL'S LANE }
Calcutta January 1911, }

PREFACE TO THE THIRD EDITION.

For a medical book by an Indian Author, its demand for a third edition within so short a time affords the best proof that the work is proving useful to those for whom it is designed. The author took much pains in revising this edition thoroughly and made necessary additions and alterations according to the recent progress in the medical science. But he did not live to see the fruits of his labour ; after an extensive European tour the cruel hand of death had laid him to rest for ever in the midst of a promising career. And the duty of publishing his work in conformity with his wishes devolved on me and I have pleasure to announce that in spite of the high cost of printing and materials, the price of the book, though considerably increased in volume, remains the same, so that an appreciative public may find no difficulty in judging of its merits.

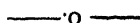
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CONTENTS.



CHAPTER I.

Fever.

Page

Fever ...

CHAPTER II.

Specific Infectious Diseases.

Tuberculosis	17
Lupus Vulgaris	48
Cholera	50
Dysentery	64
Typhoid	75
Rheumatism	98
Malaria	107
Cachectic Fever	120
Plague	131
Cerebro-spinal meningitis	141
Whooping cough	147
Small pox	152
Measles	157
Influenza	161
Diphtheria	163
Tetanus	167
Septicæmia	169
(a) Boils and carbuncles	170
(b) Anthrax	75
Erysipelas	178
Leprosy	183
Actinomycosis	192
Scarlet Fever	102
Dengue ..	195
Relapsing ..	195
Yellow ..	196
Malta ..	197
Glanders	198
Hydrophobia	198

CHAPTER III

Diseases of the Perverted Metabolism.

Gout ..	200
Purpura	211
Scurvy	212

Hæmophilia	214
Diabetes Mellitus ..	215
Diabetes Insipidus .	247
Obesity ...	248
Rheumatoid Arthritis .	257

CHAPTER IV

Diseases of the Digestive System.

Stomatitis ..	260
Tonsillitis ..	264
Pharyngitis	267
Dyspepsia	268
Gastric ulcer .	283
Duodenal ulcer	293
Gastralgia ..	295
Dilatation of stomach	297
Appendicitis	301
(a) its criticism	308
(b) its reply	311
Chronic constipation	313
Diarrhoea	327
Peritonitis	341
Acute Intussusception	343
Hæmorrhoids	344
Fissures and Erosions of the anus	347
Catarrhal Jaundice	347
Icterus Neonatorum	356
Icterus Gravis	357
Cholelithiasis (Gall-stone)	358
Pancreatic calculus ...	365
Tropical Hepatitis	365
Cirrhosis of Liver ..	371
Infantile Liver	381

CHAPTER V.

Diseases of the Circulatory System.

Angina Pectoris	384
Pericarditis	388
Endocarditis	392
Mitral regurgitation	395
„ Stenosis	405
Aortic regurgitation	408
Diseases of arteries—	
1 Arterio-sclerosis	413
2 Aneurism	422

	<i>Page.</i>
Diseases of the blood—	
1. Anæmia	425
(a) Chlorosis ..	427
(b) Pernicious anæmia	431
2. Leukæmia	435

CHAPTER VI.

Diseases of the Respiratory System.

Acute coryza	440
Sorethroat	440
Laryngitis	441
Bronchitis	442
Pneumonia	449
Broncho-pneumonia	465
Bronchiectasis	467
Asthma	471
Emphysema	483
Pleurisy	486

CHAPTER VII.

Diseases of the Genito-Urinary System.

Albuminuria	495
Bright's Disease	496
Lardaceous disease of The Kidney	519
Hæmaturia	520
Pyuria	524
Masturbation	526
Impotence	528
Nocturnal Enuresis	529
Orchitis	531
Weeping Eczema of scrotum	533
Calculus	533
Gonorrhœa	548
Syphilis	557

CHAPTER VIII.

Diseases of the Internal Secretory organs.

Diseases of the Thyroid gland—

(a) Goitre	571
(b) Exophthalmic goitre	572
(c) Myxœdema	574
Addison's Disease	576
Infantilism	580

CHAPTER IX

Diseases of the Nervous System.

A. Functional nervous disease—

	<i>Page.</i>
1. Hysteria ...	588
2. Neurasthenia .	597
3. Neuralgia ...	609
4. Epilepsy	621
5. Chorea	627
6. Paralysis agitans	632
7. Vertigo	635

B. Organic nervous disease

i. Disease of nerves —

1. Peripheral neuritis	637
(a) Beri-beri	641
(b) Epidemic dropsy	642
2. Facial paralysis	648

ii. Disease of Spinal cord—

1. Myelitis	651
2. Acute anterior poliomyelitis	658

iii. Degeneration of spinal cord—

1. Locomotor ataxia	663
2. Hereditary ataxia	670
3. Spastic paraplegia	671

iv. Cavities in Spinal cord—

1. Syringo-myelia	674
-------------------	-----

v. Muscular atrophies and dystrophies

674

vi. Degeneration of Brain—

Multiple sclerosis	679
--------------------	-----

vii. Cerebral Palsies—

Hemiplegia ..	681
---------------	-----

CHAPTER X

Malignant growths.

(1) Sarcoma	685
(2) Carcinoma	686

CHAPTER XI

Diseases due to Animal Parasites.

1. Ascariasis	700
(i) Ascaris Lumbricoides	700
(ii) Oxyuris vermicularis	700
2. Trichiniasis	700
3. Intestinal cestodes	701
4. Filariasis	701
5. Anchylostomiasis	707
6. Sleeping sickness	713

A Treatise on Treatment.

CHAPTER I.

FEVER.

Fever is a diseased state of the system marked by increased production of heat, acceleration of the pulse and a general derangement of the functions

“ Blood seems to boil in the veins. ”

Three kinds of fever :—

- (i) *remittent* i.e., *fever subsides or abates at interval*
- (ii) *intermittent* i.e., *fever intermits or entirely ceases at intervals.*
- (iii) *continuous* i.e., *fever neither remits nor intermits.*

The pathogeny of fever is variously conceived. Some think its origin is purely nervous, either from a hyper-excitation of the grand Sympathetic or from a paralysis of the moderating nerve-centre said to be situated at the union of the medulla oblongata with the pons. Others think fever to be the action of pyretogenic agents stimulating unduly the process of nutrition

Prof. Sajous's latest theory of fever : the thyroid (including the parathyroids), the pituitary, and the adrenals, are related as follows : (1) that the *secretions* of the thyroid and parathyroids, acting jointly, increase the vulnerability or sensitiveness of all tissue-cells, wastes, bacilli, toxins, etc., to oxidation, by a direct action on their phosphorus, thus constituting the substance now known under various names : “opsonin,” “agglutinin,” “precipitin,” “sensibilisatrice,” etc., (2) that among the tissues thus sensitized is the governing

centre of the adrenals which centre he has traced to the pituitary body, (3) that the adrenal secretion carried to the lungs with the blood of the inferior vena cava, is the substance which takes up the oxygen of the air, (4) that the adrenal secretion, when thus laden with oxygen, becomes the oxidizing constituent of the hæmoglobin which sustains the body-heat, metabolism and nutrition, and (5) that the power of the blood to destroy bacteria, their toxins, toxic waste-products and other poisons corresponds with the proportion of thyro-parathyroid and adrenal secretion it contains. In short, the thyroid, the pituitary body, and the adrenals thus connected by nerve-paths act jointly to enhance, when needed, general oxidation and produce a heretofore unexplained phenomenon, fever.

It is to be remembered that no fever is ever a sign of a sthenic condition of the organism, but on the contrary, is always a sign of asthenia of the organism. Fever is not a disease in the truest sense of the term. It is a mere symptom of some latent process working insidiously in our mechanism.

Hence it is our maxim that whenever a fever makes its appearance, it is the imperious duty of the physician to sustain the patient's vital force for the very purpose of helping him to put out the fire that threatens to consume the patient now or else ruin him for the demanding actions of life in time to come.

The principles and problems of immunity are of vital and imminent importance. Indeed, in a broad sense, they constitute the principles and problems of Medical Science.

H. Osindoff remarks —

"Natural recovery from bacterial disease only takes place in virtue of an acquisition of immunity to the infecting agent and with but few exceptions all medical treatment simply aims to promote this end." Immunity plays a vital and fundamental role in the cure of disease, and physician should know about its *modus operandi*.

Physician should try to support patient's strength, to improve the general vitality, and facilitate the performance of the normal physiological processes by properly prepared and regular diets, by providing fresh air and by the removal of pain and other symptoms which tend to impair the patient's strength. These agents are of paramount importance in medical treatment, but in themselves are useless and they only act by hastening the evolution of immunity, without which the disease must necessarily progress to a fatal issue.

Broadly speaking immunity is formed by active and passive methods :—

Before describing anything about active and passive immunity, let me try to explain —

(1) The Principles of Active immunization.

Koch's idea was that of a local action on diseased areas, Ehrlich ascribes it to the union with receptors of the tissue cells, Metchnikoff, to phagocytosis, Wright, to the increase of opsonins in the blood, and Sargous, to its power of stimulating the "test organ" of the pituitary body, the latter being the nerve centre which controls the functional activity of the thyroid and adrenals and through these organs, the immunizing power of the blood.

In his recent work on the "Internal Secretions," Sargous has pointed out that the blood's immunizing properties are found in the secretions of the ductless glands, and makes this postulate "the power of the system to antagonize the constitutional effects of the pathogenic germs, is directly proportionate to the functional efficiency of the adrenal system," the latter being composed of the pituitary body as governing centre, the thyroid glands, and the adrenals. According to this view, it is by and through the adrenal system that all the immunizing substances are manufactured, and instead of having a multiplicity of antibodies he resolves them into two groups, both caused to appear in the blood

by the exciting action of the toxin on the adrenal centre : the *preparatory* group (opsonin, agglutinin) composed, as shown by correspondence of chemical tests, of the thyro-parathyroid secretion, which sensitizes bacteria and toxin, and the *bacteriolytic or antitoxic* group (amboceptor and complement in plasma and phagocytes) composed, as also shown by chemical correspondence, of the adrenal secretion, a trypsinic ferment and nucleoproteid granulations of certain leucocytes.

Gruber, Wright and others had expressed the view that the antibodies were internal secretions of the tissues of the body and the opinion prevails that they are physiological products of tissue cells, but Sajous has shown that while they are present more or less in all tissues, their *original* source is the thyroid adrenals and pancreas, since removal of either of these organs inhibits, the immunizing power of the body and of all cells. In the blood, the antibodies act chemically (by hydrolytic digestion) upon the bacteria and their toxins, in his opinion, these pathogenic substances being thus converted into benign and eliminable products

Fassin, of the Bacteriological Institute of Liège, Belgium, found since that "the bacteriolytic and hæmolytic alexins were increased when thyroid preparations were given in any form," while Marbé, of the Pasteur Institute, found that this applied to opsonins, "the phagocytic activity of leucocytes for various bacteria, including the tubercle bacillus and the bacillus coli, being markedly increased," under the influence of thyroid. Conversely, removal of the thyroid gland reduced greatly the opsonic power of the blood.

(2) Nature and Variation of Immunity.

It must be remembered that an established immunity is not a definite, fixed condition, but that its border lines are movable and what in one instance may be successfully resisted may in another instance be sufficient to overpower the defending organism, e.g., in the case of pneumococci, a bacteria

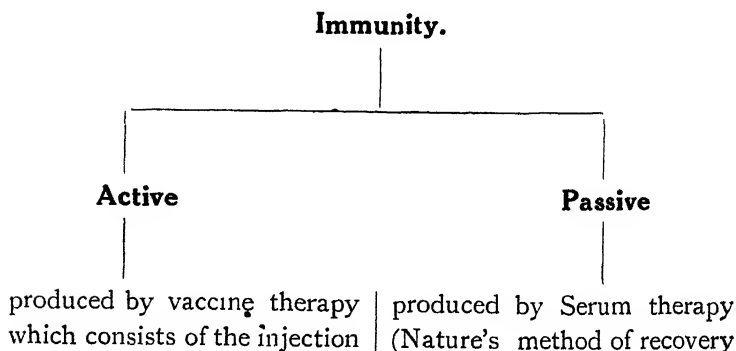
very widely distributed, and almost universally present in the mouth. In all ordinary circumstances resistance is sufficient to ward off real infection, but under adverse circumstances, as by fatigue, starvation, cold, overdoses of alcohol, etc., the bodily resistance may be lowered to a point which permits them to gain access to suitable soil for rapid propagation, and infection occurs.

By infection we mean the gaining of a foothold by living virulent pathogenic bacteria in a region where their toxins may act on the tissues of the body.

Along this same line it will be well to recall the condition pointed out by Prof. Elias Metchnikoff the master pioneer of our development. Of the lower animals the hydra occurs in water which naturally contains saprophytic bacteria, while the hydra lives, it enjoys security against the action, but death breaks this immunity, and in a few hours its protoplasm is broken down by putrefactive processes.

Immunity, then, to putrefactive bacteria is a condition of life in the whole animal kingdom, and has been designated "inherent immunity." This condition explains the rotation of nitrogen, and thus prevents the locking of all nitrogen provided by nature in old protein compounds.

We may easily understand, then, that "absence of bacteria or absence of immunity are alike incompatible with life."



Immunity—Contd

Active

into the patient of the actual organism causing the disease previously killed by heat.

Active immunity depends upon the induction within the body of some form or other of active disease process, either vigorous or modified, of the disease against which immunity is desired.

The principal point is that the tissue cells are subjected to the action of an organism or its products which provokes the cells to provide a resistance and are henceforth less susceptible

It is most adapted to the management of the mild or Chronic Stages.

Passive.

in diseases of bacterial origin due to formation of antibodies in the Serum)

Passive immunity depends upon the influence in the body of the elements of an organism already rendered immune. It is most adapted to combating acute Stages of infection.

(N.B.— Anti-typhoid inoculation means injection of a poison or dead organisms to produce an anti-body, it may be used as a prophylactic measure.)

Injection of Vaccine.

The immediate effect of a dose of vaccine is:—

- (1) The “negative phase” i.e., the resistance of the patient is lowered.

- (2) And this is followed by the "*positive phase*," in which there is a marked rise in the opsonic index and in the resistance of the body.
 - (3) And finally a gradual fall in the index when the dose has been correct
-

The Difference Between Vaccine and Antitoxin.

One Stimulates the Patient's Resistance, the Other Combats the Toxins Independently.

The *Journal of Therapeutics and Dietetics* points out an important difference between the action of a vaccine and an antitoxin. The antitoxin of diphtheria, for example, acts immediately to neutralize the toxins with which it comes in contact in the bodies of the patients into whom it is injected. It acts without calling upon the patient for any assistance in overcoming the poisons of the bacteria, he being merely a passive agent. And this is the general rule with antitoxins. In the case of vaccines, on the other hand, it is explained, they are themselves incapable of directly influencing either the bacteria themselves or the poisons formed by them. Their function is to stimulate the immunizing machinery of the individual to react and produce substances called opsonins, which will influence the bacteria. In the vaccine treatment, therefore, the patient plays an active part in the process, and in order for the result to be successful, he must possess sufficient resisting power to enable him to react under the stimulation of the vaccine. In moribund patients the vaccines are therefore useless, and in order to secure the best result the treatment should be instituted as soon as the diagnosis is established.

N B —Opsonic index is a reliable guide, but according to others it is not so owing to its variability

In the Septicæmia the bacteria multiply in the blood, and the protective bodies are not formed until some bacteria are deposited in the tissue suitable for the production of the antibody. So that if the organism causing the Septicæmia can be isolated, and a vaccine prepared from it, and this injected subcutaneously, the manufacture of the antibody is stimulated, and the death of the causal organism follows, with recovery of the patients.

Dr Thomas in the American Medical Association Jan 29th 1910, on the other hand remarks regarding the use of bacterins during the course of an acute infection:—

“The defences of the organism have already been exhausted and broken down, which accounts for the occurrence of the bacterimia. How illogical therefore, is the introduction of an antigen, in the hope of stimulating these body cells to the production of antibodies, when their supply has already been consumed! We must not expect the impossible from bacterin therapy: Scientifically considered the inoculation of bacterin may not only do no good, but actually result harmfully. If the theory of Vaughan be correct, albumen in the body is broken up into the toxic and non-toxic group.”

“At the time of the heterogenous injection of dead bacteria the body attacks the albumen so vigorously and releases so much of the toxic group that it is overcome by the poisonous radicle.”

The diseases contra-indicated for bacterin therapy are the diffuse infections characterised by Septicæmia Pyæmia and grave Sæpæmia. On the other hand, late in the course of the disease, if the patient survives, it must be recalled that the inoculation of dead bacteria may act beneficially.

Immunity.

I. Natural.

(1) Congenital or inherent.

Bacterial due to

Antibodies

1. Alexines
2. Leukines
3. Plakines,
4. Tropines.

Toxin due to

Antitoxin

(2) acquired due to

Having survived disease

Increase of Phagocytosis produced by.

1. Yeast-nuclein
2. Nucleic acid.
3. Spermin
4. Pilocarpin
5. Serum
6. Saline

Increase of antibodies produced by

- 1 Alkalies
- 2 Alcohol
3. Cinnamic acid.
4. Exercise.
5. Bier's passive con-
- gestion.

II. Artificial.

Specific

Passive

Toxin produced by Bacterial Toxin produced due to

Antitoxic Serum. Antitoxin produced in blood. Bacterial Serum

Active

Bacterial due to

1 Lysins 2. Opsonins. 3 Tropins. 4 Agglutinins. 5 Precipitins.

FEVER.

Von. Ofenheim's Chart modified.

N. B.—Phagocytosis is diminished by—

1. chronic alcoholism.
2. other poisons.

3. quinine; it lowers temperature due to destruction of leucocytes therefore it is contra-indicated in all bacterial infections except Malaria where quinine acts on the plasmodium. (Von. Ofenheim, *clinical Journ.* 18th Aug. 1909.)

4. Morphine (Reynolds, *Lancet* 26th February 1910)

N. B.—Smith (Lancet) on the other hand remarks that quinine and morphine increase phagocytosis. The administration of quinine in the dose of a grain for each stone (14 pounds) of the patient's weight seems likely to strengthen the natural first line of defence, especially in the initial stages of a bacterial invasion when the invaders are few.

In large doses say gr. XXX quinine diminishes phagocytosis.
Theory of bacterial immunity.

1. Phagocytosis only
2. Serum only
3. Serum and phagocytosis combined.

The administration of alexines through the Mouth:—

Prof: Buchner found out a protective Substance—"alexine" in the mother's milk, which possesses the power of destroying bacteria by dissolving them.

Prof: Von. Pöchl. isolated this alexine and called it "*Lactalexine*"

Infants not nourished with mother's milk are generally rickety or scrofulous, but when treated with lactalexine along with good food and fresh air are in herald of health within a short time.

Direction of use:—A teaspoonful of lactalexine in a glass of boiled warm milk between meals four times a day.

Its Composition:—Lactalexine is a bactericidal preparation containing sugar of milk.

Dr. Langheld in the Therapist March 15, 1900 narrates his experiments thus :

Four tablespoonfuls per day, each of 10 grms., for six days = $4 \times 10 \times 6$ grms. = 240 grms of Lactalexine. This quantity, with a small proportion of heat values per day, produced an increased weight of four pounds. It therefore cannot be asserted (the child was always weighed afterwards) that Lactalexine is a food preparation. He regards the process as analogous to that of the well-known phenomenon that persons with latent syphilis, in spite of curative treatment, do not gain weight as long as Wasserman's reaction is positive, but immediately on the beginning of specific treatment they gain rapidly, and maintain this as long as the reaction remains negative. Conversely, they fall off again as soon as the Wasserman's reaction is once more positive. Therefore, on beginning treatment with Lactalexine, the bacteriolytic power of the alexine is set free, and allows the body fluids the recovery which imparts an increase of weight to the organism.

Our organism is never without alexines whether they are present in sufficient or insufficient number. If we are once able to administer variable doses of these protective substances organotherapeutics, whether pathological or physiological, will celebrate a triumph which has hitherto been withheld from it owing to excessive zeal, hasty generalization, or questionable commercial methods.

Antitoxins, Oral Administration of.

Inhibition of digestion permits the absorption of toxins and antitoxins from the stomach. By treating children as

follows, the oral introduction of antitoxin has given uniform and satisfactory results : when possible no food for at least four hours before administering the serum , one hour before giving the serum a glass of one per cent. sodium bicarbonate solution is given , and with the antitoxic serum is given one minim of a fluid extract of opium and from four to ten minims of a saturated solution of salol in chloroform . In 19 children and hundreds of animals treated along these lines serum sickness did not occur. The authors believe that the oral method may be preferred for prophylaxis because of the ease, the absence of danger, and the small cost. For curative purposes however, the hypodermic method can not yet be replaced. In animals toxins by the mouth may produce a high immunity by absorption of the toxin promoted by the means mentioned—C. T. McClintock and W. King (*Journal of Infectious Diseases, February, 1909*).

Opsonins.

1. Opsonins are hypothetical substances in the blood-plasma which prepare the Micro-organisms for disposal of the leucocytes. Hence we see leucocytes play a passive part while opsonins the active part.
2. Leucocytes performing the function of ingesting bacteria or other foreign substances are called phagocytes, *i.e.*, the leucocytes are performing phagocytic action.
3. The normal amount of opsonins possessed by an individual is determined by counting the number of bacteria which are ingested by a certain number of leucocytes in the blood serum. This is called the phagocyte-count.
4. The normal phagocyte-count for most of the pathogenic micro-organisms now being a matter of

record, all that is necessary is to determine the phagocytic action of the sick person's blood for any particular bacterium and compare it with the normal standard: this being easily done by any one familiar with hematology and bacteriology.

- 5 The phagocyte-count of the patient having been determined, the "opsonic index" is obtained by dividing it by the normal phagocyte-count for that particular bacillus or coccus

Thus if examination shows that in the Serum of the patient 240 bacilli of tuberculosis are ingested by 40 leucocytes in 15, the phagocyte-count of that individual would be 240 divided by 40 that is 6

Now, in normal blood-serum only 160 of these bacilli are ingested, that is the normal phagocyte-count for the bacteria of tuberculosis is 4.

So the "opsonic index" of the patient is found by dividing his phagocyte-count. (6) by the normal phagocyte-count for tubercle-bacilli (4), giving 1.5.

The precise value of the opsonic index has not yet been determined

N. B.—Changes in the erythrocytes may be of more importance than those of leucocytes

Rouleaux formation of the blood:—

Lauder Brunton in Journ. Path: 1900 advances the thesis that rouleaux formation is close akin to the phenomenon of bacillary clumping, and not so much due to the mechanical properties of the corpuscles and Serum as was supposed.

Rouleaux formation increases in certain diseases *e.g.*, Rheumatic fever, Pneumonia and Septic fever.

Rouleaux formation diminishes in all forms of anæmia.

Food values in Fever.

Fever tends to cause constipation, and nothing is more important in fever than to keep the *Via primæ* open. Moreover, in fever the functions of the liver and digestive organs are depressed, and the state of the tongue is the best index of the state of the digestive tract and liver.

The liver probably subserves the useful role of disposing of waste products of metabolism, and may get rid also of toxic products of bacterial origin, perhaps even of bacteria themselves.

Fever is a helpful ally. If fever be prevented by the use of antipyretic drugs infections otherwise innocent would prove fatal, and from this we learn one grand truth that in the vast majority of instances the physicians should not attempt to modify fever.

Dr. F. G. Hayworth remarks, physiologically we do not draw our strength from our food, for this is mainly devoted to making good the loss of tissue waste which is constantly going on in the animal economy—dead tissue is constantly being thrown off and new cells are being born. In other words, our strength depends on the ability of the tissues to keep themselves in a state of functional activity, and not on the nutritive qualities of the food, at any rate, only in the measure that they can utilize it.

“Food that cannot be assimilated is a hindrance rather than a help, a fact that is recognized in the dietetic treatment of the various forms of dyspepsia, where our efforts are directed to eliminating from the dietary such articles or quantities as the organism is unable to cope with.

‘We must not overlook the great loss of energy to the body in handling and getting rid of the surplus of unnecessary food of whatever kind introduced into the alimentary tract, to say nothing of the danger of intestinal putrefaction and

toxemia when, from any cause, the system loses its ability to digest and absorb the excess of food consumed. Further, the strain on the kidneys and other organs must not be over looked."

"Absolute deprivation of food for a time is unquestionably of the greatest benefit in the early stage of acute constitutional diseases—typhoid fever, acute enteritis gastritis, nephritis, &c.—and there are many conditions—uræmia, for instance—in which a strict water diet for twenty four or forty eight hours is productive of the greatest benefit. Under these circumstances the organism has time to rid itself of organic detritus."

"This is not a new principle, since it was the conception that led our predecessors to "starve a fever" though they went too far, in that, having raised the principle to the dignity of a dogma, they refused food even when the patient asked for it *Nous avons changé tout cela*, but the actual tendency is to the other extreme, of constraining the patient to take food whether he wants it or not. The truth no doubt lies between the two extremes—withholding food until the need for it becomes manifest, and according it directly this is the case."

"Refusing food when craved for, on the ground that it will prove injurious, is a very different matter. In typhoid fever or gastric ulcer, for instance, there are physical reasons for withholding food in spite of the patient's appeals, so that we should not be justified in acting on the so-called natural impulses."

"The inference to be drawn from the preceding remarks is that in acute diseases associated with a furred tongue, a foul breath, anorexia, and constipation, water diet is indicated. Within twenty-four or forty-eight hours of this deprivation the organism will have recovered its assimilative faculty to some extent, and will create an appetite which may then be gratified. Plenty of liquid is required and the best are hot

vegetable infusions, such as camomile tea, weak China tea, infusions of couchgrass, linseed tea, thin barley water, cherry stalks, or maize stigmas, which are in common use as *tisanes* on the Continent. These may be sweetened with sugar, thus providing a small amount of readily oxidizable nourishment."

Scientific investigation has proved beyond doubt the value of diet of high caloric value and rich in carbohydrate, in fever. It protects, to some degree, the proteins of the body which otherwise would be rapidly destroyed.

The ideal fever diet should consist of such food stuffs as will meet the dynamic needs of the organism, and prevent excessive loss of weight until natural immunity processes terminate the disease.

The following are recommended.

1. Sago, salt and water flavoured with orange
2. Sago, sugar and water flavoured with rose water.
3. Barley, wheat and rice gruel
4. Soups of French bean, potatoes, &c.
5. Milk or fermented milk

Hence the main object of dietetic treatment is to enable the patient to regain his lost weight, but not to make him a "flabby breathless mass of inert fat."

Specific Infectious Disease.

CHAPTER II.

TUBERCULOSIS.

Tuberculosis is an infective disease and that without the presence and aid of *Bacillus tuberculosis* there can be no *tuberculosis*. The writer could not help quoting the dictum "no tubercle bacillus, no tubercle."

We are all painfully aware of the dreadful ravages of this fell disease which sweeps away annually myriads of souls throughout the length and breadth of India.

No class is exempt, no walk of life is free from the scourge, we find it alike in the hovel of the poor and the mansion of the rich. The questions naturally strike us "Can tuberculosis be prevented?" "Can tuberculosis be cured?"

The physicians of the past regarded phthisis as an "incurable" disease. Personally the writer believes that in the large majority of cases in the early stages pulmonary tuberculosis can be cured, and in advanced cases the disease can be kept in abeyance for a considerable length of time and the lives of the sufferers can be made comfortable.

Human and Bovine tuberculosis.

There are two types of tuberculosis of which mankind is susceptible, viz:—

1. Human.
2. Bovine.

- 1 Man is the all-important source of tuberculosis in man.
2. Bovine type causes tuberculosis to bovines, swine, to a less degree to children and to a lesser degree to young adult, hence the danger of using infected cow's meat, milk and butter.

Tuberculous cow is a potential or actual centre of infection. Try to detect suspected cows by tuberculin test and destroy them at once

In 1898 Theobald Smith had proved to the bacteriological world that the bovine tubercle bacillus differs from human variety in several important points Prof A Eler Leipzig in the *Muenchener Medizinische Wochenschrift* for January 18th 1910, concludes after a series of experiments that it is possible to transform the tubercle bacillus derived from tuberculous material from human sources into a form highly virulent for cattle and rabbits, and which in other ways behaves like tubercle bacilli of bovine type

Avian and human tuberculosis :—

The human tubercle bacillus is pathogenic to the pigeon in a very limited degree only

The avian tubercle bacillus is pathogenic to the guinea-pig in a very limited degree.

At the Ninth International veterinary Congress held at Hague (*September 14th-19th, 1909*), one of the subjects discussed and the conclusion arrived at was the transmission of avian tuberculosis to mammals, and that the avian bacillus is not physiologically identical with the human.

Life of the Tubercle Bacillus Outside of the Human Body.

The air of exhalation is sterile and harmless, and there is no physician or scientist, who, having even a slight know-

ledge of the bacteriology and pathology of this disease, will dispute that fact. To contend to the contrary is but an expression of ignorance

The tubercle bacillus is not found floating about in the air around or near the home of the consumptive, even if the consumptive should be a careless one.

The tubercle bacillus in sputum, fæces, urine and abscess discharges lives outside of the body.

The majority of the tubercle bacilli in sputum are dead before the sputum is raised. Kitasato, a Japanese scientist, has demonstrated that fact by experimental research, showing that about 95% of them are found to be dead when raised.

It is as certain that dead tubercle bacilli cause no disease as it is that "dead men tell no tales."

The majority of tubercle bacilli found in phthisical sputum come from the caseous areas, which have neither blood nor lymph supply. So, starved of food and aeration, bathed in its own destructive poison, it soon dies.

The living tubercle bacilli found in tuberculous sputum do not come from the caseous areas. They are cast off from those tissues surrounding the caseous areas, tissues which still have life, blood and lymph supply. There the germs find conditions necessary to life. They have food, aeration, and are not being constantly bathed in their own poisonous excretions. Bacilli will live longer in dry than in moist sputum.

Rosenberger (*The American Journal of the Medical sciences, February 1909*) startles the medical world by first demonstrating the presence of acid-fast bacilli in the blood of tubercular patients especially in cases of miliary tuberculosis.

D Moor Alexander (*The Journal of Hygiene April 1910*) proves to the scientific world.

- (1) That acid-fast bacilli may be present in the faeces in cases of pulmonary and intestinal tuberculosis,

- (ii) That their presence even in relatively large numbers does not necessarily imply ulceration of the intestine.
- (iii) That acid fast bacilli are not found in the faeces under normal conditions or in diseases other than tuberculosis.
- (iv) That acid fast bacilli present in the faeces of tuberculous persons are tubercle bacilli.

Enemies of tubercle bacillus.

1. The germs of putrefaction multiply more rapidly and hasten decomposition in a moist media than in a dry one. Putrefaction of sputum is very deadly to the tubercle bacillus for two reasons. First, because the products of putrefaction are very toxic to the tubercle bacillus, secondly, the putrefactive germs multiply more rapidly during such a process, and soon deprive the tubercle bacillus of its aeration which latter condition has been spoken of as "crowding out."

When the sputum dries, the bacilli become encased in an impervious capsule of desiccated mucous, which protects them from extraneous conditions which favour their death, the chief condition being the attack of the putrefactive organisms. It is, therefore, obvious that tubercle bacilli will live outside of the body longer in dry sputum than in moist sputum. Therefore, our first lesson is never permit the sputum to dry and we will hasten the death of the contained bacilli.

2. Light is deadly to the tubercle bacillus. Direct sunlight is rapidly fatal, in fact, as a germicide, there is nothing better, with the exception of fire. *Pottinger says "the surest enemy of the tubercle bacillus is light."

* Pottinger Pulmonary Tuberculosis,

3. The omnipresent saprophytic organisms found in abundant numbers everywhere, deprive the tubercle bacillus of its necessary aeration. ‡ Cornet says "It is therefore illogical to speak of a place or a dwelling as saturated with the accumulated growth of years of bacilli."

Diagnosis of Tuberculosis.

1. Moro's test :—An ointment impregnated with tuberculin is rubbed into the skin, if tuberculus, a papulo-pustular rash appears and lasts several days

2. Van Pirquet's test :—The arm is lightly scarified, and a drop of Koch's concentrated old tuberculin is rubbed on the scarified area. If positive a red papule appears, occasionally after a few hours, usually within 24hrs or even longer

3. Calmette's aphthemic test :—A drop of 1pc Koch's old tuberculin is placed on the conjunctiva. If positive it indicates the presence of tubercle which may or may not be active ; if negative it does not indicate that the active tuberculosis is absent

4. Subcutaneous tuberculin test :—Koch's old tuberculin is inoculated under the skin in increasing doses . 1, 5, 10 milligrammes. Positive reaction is shown by (1) local reaction at the site of inoculation. (2) Subjective malaise & fever (3) reaction at the site of tuberculosis.

5. Serum reaction : Opsonic Index test as devised by Sir Almroth wright.

6. Blood examination for tubercle bacilli as advocated by Rosenberger.

7. Faeces examination for tubercle bacilli.

‡ Notnagel's Encyclopedia of Practical Medicine. Amer. Edition,

8 Sputum examination.

The treatment of Pulmonary tuberculosis is divided under two broad headings :

- i. Preventive
- ii. Curative.

1. Preventive.

It is now an established fact that the disease is caused by the microbic germ called after its discoverer "Koch's tubercular bacillus" and that the sputum is the very cradle of germs: hence if we can destroy the sputum we can nip the spread of germs in the bud. "Hope springs eternal in the human breast." The writer quotes the old motto "prevention is better than cure"

1. The baneful practice of spitting on the walls, floors, public cars, in short, here, there and everywhere, are the prolific sources of spreading the contagion. The sputum dries up, the germ will remain in a dormant state for a considerable length of time and may roll from place to place till it gets a favourable nidus to thrive and makes a havoc within its new intruder

The best plan would be to educate the rising generation of youths during their scholastic careers, and to issue order to be formulated into a law that "spitters" will be prosecuted. This procedure outwardly sounds harsh, but for the safety of the public such a law will surely bear good fruit in the end. The phthisical patient must spit in a cup containing some antiseptics, and when out of doors they should spit in a specially made little pocket flask which they must carry and which is regularly and frequently cleansed and disinfected

Japanese paper serviettes or handkerchiefs as used in some British Sanatoria can safely be recommended and to be burnt afterwards to nullify the risk of infection,

- 2 To sleep in a separate bed should be the rule
 - 3 Milk is undoubtedly a vehicle of the disease and should be carefully boiled.
 - 4 Meat should be well cooked. Goat is said to be immune from tuberculosis.
 5. Diet should be generous and must contain a large portion of fat.
 - 6 Dry well aired room where the sun has free access.
- Flick has rightly remarked :—
- “Consumption may well be termed a house disease”
7. Out-door exercise in open air
 - 8 Daily cold bath
 9. Use of flannel next to the skin
 10. Heredity plays an important part in the roll of the disease

II. Curative.

There are four kinds of Phthisis, *viz*

- i Miliary tuberculosis
- ii. Caseous tuberculosis
- iii Fibroid tuberculosis
- iv. Fibro-caseous tuberculosis

The writer summarises treatment under six heads :—

- i. Medicinal.
- ii. Symptomatic.
- iii. Treatment by tuberculin.
- iv Dietetic treatment.
- v Hygienic. treatment.
- vi Open-air treatment.

1. Medicinal treatment of phthisis.

The disease is divided under four stages :—

- (a) Stage of infiltration
- (b) Stage of softening.
- (c) Formation of cavity.
- (d) Stage of contraction.

Medical profession in its present status is helpless to cope with this terror—" the white plague, " but " there are many drugs which assist in strengthening the system, and thereby they may assist the cure " (*A hand-book of Open-Air Treatment—Pages 89-91*).

Even the Brehmer Tripod, *viz*, the greatest amount of food, rest and fresh air, upon which the Father of the modern therapy of tuberculosis has declared that all treatment must stand, becomes a familiar expression.

The main indications are :

- (1) To reduce inflammation.
- (2) To destroy the virus.
- (3) To build up the strength.
- (4) To palliate the symptoms.

Internally :—

1. In incipient stages the following prescriptions act like a charm :

(a) R

Arhenal	gr. vi.
Hætol : (Sodium cinnamate)	gr. xxiv.
Guaicol Benzoas :	gr. xxxviii.
Quinine glycono-phosph.	gr. xxiv.
Ext. Nucis Vomica	gr. vi.
Syr : Glucose q. s.	

mft. divide the mass into 24 pills : *sig.* one thrice a day.

(b) R

Sodium cinnamate	gr. i.
Thiocol	gr. iv.
Sodi Cacodylate	gr. $\frac{1}{2}$.
Quinine Glycero-phosph.	gr. i.
Ext. Nucis. Vomica	gr. $\frac{1}{4}$.
Syr. Glucose q. s.	

mft. for a pill · sig. one thrice a day.

2 Kugloid :

The writer highly recommends these Capsules : dose one or two thrice a day.

3 R

Urea	gr. xv.
Aq. Cinnamon	ad. ℥j.

mft. for a dose : sig one thrice a day , the object being to bring into the system sufficient amount of urea which is lauded to be an antidote. Stop the mixture when there is diarrhoea.

4. Creasote is said to be a specific :

(a) Creasotal m. x. in milk thrice a day.

(b) When there is much expectoration:

R

Creasotal	℥ii—iv.
Syr : picis liq :	℥iss.
Syr Cascara Sag.	℥iss.
Ext · Nucis Vomica liq :	℥ss.
Syr : hemidesmus	ad. ℥viiij

mft. Put 24 marks : sig. one thrice a day * with an ounce of water.

5. *Codliver oil in the shape of:

(a) Waterbury's Metabolized Codliver oil.

(b) Lofatol.

*N B.—If the patient cannot bear codliver oil Anger's Petroleum Emulsion is an excellent substitute

- (c) Murrhol in Capsules.
- (d) Cream of malt with codliver oil hypophosphites and Creasote : (*Openheimer and Sons*)

6. Nuclein : (*Parke Davis & Co*)

(4) The most important ingredient, however, in its composition is nucleinic acid, a very powerful antiseptic agent, promoting leucocytosis whenever it is brought into contact with living tissues. Nuclein has been used with considerable success in the treatment of tuberculosis and other infectious diseases, as well as locally in abscesses and ulcers.

Nuclein enhances the natural powers of resistance to pathogenic organisms.

The nucleins of the body have been said to form the chief chemical constituents of the nuclei of cells, and to be, in fact, those vital elements by which the cell develops and reproduces itself. Nuclein exists in various vegetable as well as animal cells, and for medicinal purposes is best prepared from yeast, which yields a product specially rich in nucleinic acid.

DOSE :—One or two capsules (each contains 2 grains of dry nucleinic acid) thrice daily between meals and at bedtime. In all forms of tuberculosis it appears to be an ideal means of combating the invasion, it produces leucocytosis, and the treatment is well worthy of trial in conjunction with the ordinary remedies, *viz*, Creasotal and Codliver oil.

7. Lecithin pills : (*Parke Davis & Co.*)

Dose one three times a day.

Lecithin is a natural phospho-glyceride and contains a high percentage of phosphorus in organic combination. It is readily and completely assimilated by the tissues, and is one of the best agents to employ in all derangements due to a lack of organic phosphorus. It stimulates metabolism, improves the

appetite and generally promotes nutrition and growth. It is indicated in *anæmia*, *chlorosis*, *diabetes*, *rachitis*, *tuberculosis* and all *neuroses* dependent upon impaired vitality. The average dose is $1\frac{1}{2}$ grains, thrice daily

8. Thiocol acts admirably well in infantile tuberculosis, usual dose being ten to fifteen grains.

9 Zickgraf (*Centr. f. inn. Med. May 16, 1908*) advocates the use of sodium silicate in pulmonary tuberculosis.

Silicates are contained largely in connective tissue, and it is suggested that if there is a plentiful supply of silicates the pulmonary connective tissue becomes better nourished and more able to limit tuberculous disease.

10. Guycose. (an 8 percent Sol of liquid Somatose of guaiacol-calcium Sulphonate.) Dose 3 to 4 teaspoonfuls. Guaiacol is the potent weapon of the physicians of the day; calcium salts in the blood serves to strengthen the cardiac action. (*Sir Lander Brunton*).

Zunty has demonstrated by experiments that the body rapidly assimilates the nitrogen which presents in Somatose; hence the combination of the three as we find in guycose (*Bayer Co*) is an ideal one.

In the *British Journal of Tuberculosis* (Jan. 1912) the claims of guycose as a remedial agent in phthisis are considered. The preparation is stated to decrease the amount of sputum, to alter it in character from purulent to catarrhal, to lessen the cough, to stimulate appetite and improve digestion. The writer says that guycose "merits thorough trial."

Locally.—

1. R

Oil Morrhua	ʒi.
Oil Eucalyptus	ʒii.
Oil Cinnamon	ʒi.
Camphor	ʒss
Lanoline	ad. ʒii

mft. to be rubbed over the chest, front and back twice a day, *viz.*, once at noon, another before going to bed.

2 Paint the affected part with the following —

R

Creasote	3ii
Lint Iodine	3iv.

mft. to be applied as directed.

3. The writer recommends hot packs round the chest and prescribes in obstinate cases jothion in the form of oily solution or ointment according to the following formulæ:

R 1. Jothion	2 parts
Olive oil, up to	20

Fifteen to twenty drops to be rubbed in morning and evening.

R 2 Jothion	5 parts.
Anhydrous lanoline and vaseline	
of each up to	20

A piece the size of a pea to be rubbed in morning and evening.

In either case the writer recommends that the jothion be thoroughly rubbed in for several minutes, this being followed by more or less complete absorption. He has found the method especially valuable in pains of the chest in tuberculous patients, success being almost invariable.

Inhalation.—

1. Formalin Inhalation.

The writer strongly recommends the formula as advocated by Dr. Lardner Green, *Lancet* August 19, 1899, and a little modification of it as published in *British Medical Journal*, Jan. 20, 1900—Page 139.

R

Formalin	ʒi
Glycerine	ʒivss.
Spt. Ammon Aromatic	m. x.
Aq : pura	ʒv.

mft. to be used with an inhaler 4 to 6 times a day.

2. Chloretone inhalent through a nebulizer (*Parke Davis & Co.*)

3. Menthol paroline in a paroline atomiser.

4. R

Acid Carbolic	gr. x.
Oil Eucalyptus	m xii.
Menthol	ʒss.
Hazelline	ʒj.
Pinol	ʒss
Paroline	ad. ʒj

mft. to be inhaled in paroline atomiser six times a day

5. Creasote in Coghill's dry respirator.

6. R

Oleum pini	ʒi.
— Cinnamon	ʒss.
Terebene pure	ad. ʒj.

mft. to be inhaled in Maw's or Mudge's Steam Inhaler.

11. Symptomatic treatment of Phthisis.

1. *Night Sweat*—

(a) R

Agaracin	gr. $\frac{1}{1}$
Dover's Powder	gr. ii.
Syr : glucose q. s.	

mft. for a pill : sig. one at bed time.

(b) R

Zinc Oxide	gr. ii.
Ext. Belladonna	gr. $\frac{1}{4}$.

mft. for a pill : sig. one at bed time :

2 *Dry Cough*,—

(a) Codeine jelly a tea-spoonful during fits of cough.

(b) Angier's Petroleum Emulsion a tea-spoonful

(c) Trochisci morphin et ipecacu : one when required.

(d) R

Dover's Powder	gr x
Pulv. Antimonialis	gr. ii
(Jame's Powder)	

mft. for a dose : sig. at bed time.

(e) Tabloid Benzoin Co. One during fits of Cough.

(f) In troublesome Cough.

R

Acid Hydrocyanic (dil)	m iii
Acid Nitro muriatic (dil)	m x
Liq. Morphin hydroch	m v
Vin Ipecac	m vii
Syr. Prunum Vergenium	ʒij

mft. for a dose : sig. one when required.

(g) Glyco-Heroin : half a tea-spoonful when required

(h) Use "will power" that "I shall and will not cough."

3. *Hæmoptysis* :

Open the bowel by the following :

R

Mag. Sulph.	ʒ i
Acid Sulphuric Aromatic	m v
Tinc Cardamon Co	m xx
Aq. Menth pep.	ad ʒj

mft. for a dose : sig. one every two hours till the bowel is opened.

Then prescribe any of the following .—

(a) Hewlett's mixture heroin et turpin or

Elix. Heroin et Terpen hydrat (P. D. & Co).

DOSE :—A teaspoonful every 3 or 4 hours up to 3 doses.

Sedative properties of heroin and Stimulant properties of

terpin are of special use in cough and bronchial irritation.

(b) The following is a favourite combination of the writer—

R_x

Terpin hydrate	gr. ii
Heroin Hydroch.	gr $\frac{1}{16}$
Syr. Prunum Vergenium	ʒj
Mucilage acacia	ʒj
Aqum	ʒj

mft. for a dose : sig. one every 3 or 4 hours up to 3 doses.

(c) R_x

Calcium Chloride	gr. x-xx
Liq · Morphin hydroch :	m v
Glycerine	m x
Aq Chloroform	ad ʒj

mft. for a dose : sig one every 3 or 4 hours up to 4 doses a day.

(d) Calcium lactate gr. v tabloid every three hours.

or

R_x

Calcii carb precip	ʒj
Acid Lactic B. P.	m 130
Aq	ad ʒvi

Solve : (one table-spoonful contains 15 grains calcium lactate). (*The Prescriber* 1908)

(e) Lower arterial pressure and arrest hæmorrhage.

(i) Chloral hydrate and aconite.

(ii) Nitro-glycerine hypodermically.

(iii) Inhalation of Amyl nitrite

(iv) Inhalation of Chloroform as advocated by Dr. J. B. Fitch (*Journal of the American Medical Association of June 12, 1909*). Chloroform should not be used if the heart of the patient is dilated or very feeble.

(f) Application of cold to the genitals has been suggested. (A system of Medicine by Osler and MC. CRAE. vol. iii P. 403)

(g) Ice to suck. Ice in the chest, but it should not be kept on in one place longer than 20 minutes at a time.

4. *Diarrhœa* :

(a) R

Styracol (Guaiacol cinnamate)	gr v
Dermatol	gr v
Orphol :	gr. v
Tannigen	gr. v

mft. for a pulv : sig one twice a day.

(b) Lactic acid treatment is the best means of arresting diarrhœa, even it is associated with tuberculous ulceration Compressed Lacto bacilli or fermented milk after meal is recommended.

5. *Vomiting* :

(a) Opium in the shape of Nepanthe. or liq : Opii Sedativus m. v. in an ounce of Chloroform water when required.

(b) Strong "will force" sometimes checks vomiting

6. *Pleuritic pain* .

Paint the part with Creasote and Iodine : its formula is given above.

7. *Pneumothorax* :

(a) when it arises with dyspnœa, and symptoms of shock, use stimulants in the shape of Vin. Gallici, Ether or Ammonia.

(b) Strap the chest to prevent re-accumulation of air.

8. *High fever* :

(a) Tepid sponging with aromatic vinegar.

(b) Quinine Glycero-phosph. gr. v. in the morning.

(c) Application of iced-cloths to the Abdomen for half an hour every two hours.

T. M. ANDERSON.

9. *Mouth wash :*

- (i) Odol in water.
- (ii) Listerine gargle.
- (iii) Glycothymoline gargle.
- (iv) Alkathymol gargle.

DOSE :—Half a drachm to an ounce of water for gargle.

10. *Headache :*

(a) Eau-de-quinine or Eau-de-cologne lotion over forehead.

(b) R

Menthol	gr. xx
Eau-de-cologne	℥ss

mft. paint the temple about a rupee size followed by rapid fanning.

11 *Insomnia :*

(a) Bromural gr. v at bed time acts like a charm.

(b) R

Sulphonal	gr. x
Trional	gr. x
Vinum Gallici	m. xx
Hot Soup	ad. ℥ij

mft. for a dose : sig. an hour before going to bed.

(c) R

Chloral Amid	gr. xv
Vinum Gallici	℥j
Syr. aurenti floris	℥j
Aq. Cinnamon	ad. ℥j

mft. for a dose : sig. at bed time.

12 *Bedsore : (vide my article on typhoid).*13 *Laryngitis, pharyngitis :*

(a) Eucalyptus and menthol pestil,

(b) R

Apo-morphin hydroch	gr $\frac{1}{32}$
Creasotal	m i
Cubeb	gr $\frac{1}{2}$
Menthol	gr $\frac{1}{2}$
Glyco-gelatin q. s.	

mft. for a pestil : 3 or 4 times a day.

(c) Local application of Sun's rays by means of a reflected mirror into the larynx for quarter of an hour, is said to be beneficial.

During convalescence there is no better medicine known to the writer than Huxley's Syrup of Acidi Glycero-phosph. with or without formates :

DOSE :—A teaspoonful twice a day after meal with guaiacol benzoas gr. v-x. early in the morning

III. Treatment by tuberculin.

It depends upon the principle of immunisation, it is now admitted on all hands that tuberculin injection as a remedial agent is useless,—Dr. Savill.

.0001 mgrm. New Tuberculin given by mouth.

Tuberculin Therapy.

Koch's view—

Tuberculin acts specifically not upon the tubercle bacillus but upon the tuberculous tissue, causing its death and disintegration when it is either absorbed or discharged from the body.

Now the pathological side. As tuberculosis is both a bacillary and antitoxic disease, we have two processes going on in the tubercular area, "one, sclerosis, encapsulation (conservative and healing), the other, caseation, softening, destructive and dangerous." Therefore, the rational application of tuberculin

can be had only in strictly localized processes, and in early pulmonary tuberculosis, where the focus of infection is cut off from the blood-stream. "In this class of cases," says Douglas, "the opsonic index" is persistently low, owing to the absence of the immunizing stimuli" In the formation of tubercle, there is lowered vitality in the focus of infection, caused by the absorption of the "bacteriotropic" substance by the tubercle bacilli ; and because there is a deficit of autobacterial substances in the foci, owing to the fact that their conveyance through the lymph-vessels is greatly hindered by the barriers in the form of fibrous capsule around the tubercle. Under these conditions, it is evident, therefore, that tuberculin can act on the bacilli, only in an indirect way, and this consists in raising the nutritive power of the cells in and around the infected focus, where we get encapsulation of the tubercle, and at the same time, revitalize the tissues, making them *uninhabitable* for the bacilli. But the bacillus *still retains its poisonous properties*, and at some future time will become dangerous to the organism through diminished cell resistance. Therefore we must seek such agents as tuberculin, which are specific in their nature, under whose influence the body will secrete protective substances--the opsonins, antibodies, etc., in sufficient amounts to diminish or destroy the vitality of the bacilli or neutralize their toxins.

Tuberculin is no cure for tuberculosis, but it is an ideal means of diagnosing the disease when the body harbours even a trivial tuberculous lesion

What benefit it gives is brought about by an active response of the body cells during inceptient stage of tuberculosis, but an individual already overwhelmed by the disease and healthy animals as well as healthy human beings, do not produce such response.

Injection of tuberculin produces :—

1. Local reaction ; it consists of redness, swelling, tenderness and pain at the site of the injection.

- 2 Constitutional symptoms, *viz.*, abrupt rise of temperature.
3. Focal reaction, *viz.*, pain in the chest, dyspnoea, increased cough and expectoration

This sensitiveness for tuberculin is analogous to the principle of anaphylaxis that assumes a prominent role in our ideas of immunity.

Artificially we may increase or decrease the sensitiveness of an infected individual to tuberculin.

It is *increased* by the repeated injection of relatively large doses and particularly after an amount large enough to liberate a general reaction.

It is *diminished* by the frequent repetition of doses just short of the amount necessary to produce a reaction, but far more successfully by the administration of gradually increasing doses.

As tuberculin tolerance (antibodies = lysins or ferments) is acquired there is usually a noteworthy change in the general condition of the patient. The appetite and digestion improve energy and vigor increase and nervous symptoms abate. Thus we see tuberculin tolerance leads to tuberculin immunity. Fibrosis occurs rapidly, the significance of agglutination and of phagocytosis is not fully understood.

Hence in the treatment of pulmonary tuberculosis our object should be to attain tuberculin tolerance without the intervention of reactions.

Methods of using tuberculin are divided into two groups :—

The first group is represented by Lowenstein Roepke and others. The object is to reach high doses of tuberculin in the shortest possible time.

The second group is formulated by Trudeau, Sahli and Denys. The aim is to arrive at as high a

grade of tuberculin tolerance as possible, the reaching of large doses is not the ultimate object.

Varieties of tuberculin :—

There are four preparations of tuberculin :

1. The filtrates of liquid cultures of the tubercle bacillus, *e.g.*, "O. T." or original tuberculin of Koch and "B. F." or broth filtrate of Denys.
2. Suspensions of the ground-up portions of the tubercle bacilli themselves, *e.g.*, "T. R." or Koch's tuberculin rest.
3. Extracts of the bacilli, *e.g.*, Von Ruck's watery extract : Von Behring's preparations.
4. Combinations of the foregoing varieties, *e.g.*, the new tuberculin or bacillen emulsion of Koch "B.E.", Beranek's tuberculin.

Indications--

The type of cases most desirable and, which, in my experience has yielded almost invariably good results, are :

First—The incipient and moderately advanced cases, which are mostly afebrile, with a temperature ranging at times not over 100° F, and whose nutrition is good.

Secondly.—Uncomplicated first and second class cases with fever, although bacilli are found in the sputum.

Thirdly.—Fibroid cases without febrile reactions.

Fourthly.—Cases where fever is due solely to the toxin of bacilli and will not abate under rest and hygienic treatment : small tentative doses may do good.

Contraindications—

1. Acute miliary cases.
2. All third stage cases with mixed infection.

3. Second stage cases with bad nutrition and mixed infection.

Hæmoptysis. Where hæmorrhage occurs, it is a signal to stop the use of tuberculin temporarily, until all signs of danger from hæmorrhagic lesions have gone.

- 5 *Heart disease.* Where we fear that compensation might be lost by active stimulation from tuberculin.
6. Where the frequency and weakness of the pulse are present without any recognizable heart lesions.
7. Weak and greatly emaciated patients with a feeble and fast heart action.
8. All complications of internal organs, and nervous diseases (Ringer).

A daily record of temperature for three days should be kept before beginning treatment. The injection should be given in the morning. The patient should not exercise during the day. He should keep a two hours' record of temperature each day, until next injection.

Alcohol and all intemperance must be sedulously avoided.

Dosage :—

The most important feature in tuberculin therapy, and one on which success or failure depends, is the question of dosage. Whether we adopt the opsonic index as a guide, or rely on clinical symptoms, the one important thing is, the *correct dose*. Therefore to be on the safe side, we should :—

First.—Begin with an infinitesimal dose.

Secondly.—Do not shorten the time by increasing the dose too rapidly, or decreasing the intervals. As all tuberculin have the same reaction, and their effects are identical, it is a matter of personal choice which preparation one should use. Dr. Weaver recommends only two : old

tuberculin, and the watery extract. In using old tuberculin, we should prepare five serial dilutions in 5 vials, each dilution being 10 times stronger than the preceeding one. The initial dose of No. 1 is $1/1000$ of a mg. and No. 2, $1/100$ and so on, until No. 5 is reached, which contains 10 milligrams to the dose. The beginning of each dilution is 2 minims. We begin with 2 minims and progressively increase until 20 minims are injected. Then begin the next series. Injections should be given twice a week. Having a graduated syringe holding 1 c.c, we begin with $2/10$, or about 2 drops, and increase by tenths until 20 minims are given. We then change to the next dilution No. 2, and then proceed in the same way, and so on until the highest series is reached, remembering all the time that we are proceeding under the decimal system, and that each series is ten times stronger than the former. If reaction appears at any stage, then we should discontinue until three days after normal temperature has been reached. Then begin with half of the original dose, and proceed cautiously lengthening the intervals.

The main principle is so to regulate the dose and interval that the maximum dose may be reached with as little disturbance as possible. The intervals should be lengthened gradually, as the highest doses are reached, and extended to two weeks between the last few injections. The treatment should last from six months to two years.

Results :—

To quote Trudeau and Denys, the principal faults leading to failures are :—

First —“Beginning the treatment with too large amounts,”

Secondly,—“Raising the dose too rapidly, or at too short intervals.”

Thirdly,—“Injecting again before the effects of reaction both constitutional and local have passed away.”

Fourthly,—“Increasing the dose after reaction has occurred.”

Site of injection :—

Injectations are made *subcutaneously* under the skin of the back in the region of the angle of the scapula varying from right to left.

In conclusion it is well to emphasize again :

1. That the enemy may lie in ambush—even in a dense bed of chalk—for many years in a latent condition, but is nevertheless a source of constant danger. The only weapon for such a purpose is tuberculin. (*Practitioner*, P. 197 Feb. 1910)

2. That tuberculin immunity is not tuberculosis immunity. Not only it is possible for the original lesion to spread while the patient's general condition improves under tuberculin treatment, but even when large doses are tolerated the disease may break out in other organs. (*International clinics*, Vol. IV, 19th Series, P. 53).

3. That transcendent advantage of early diagnosis is one of the natural fruits of tuberculin treatment.

4. That the pendulum will swing back in time and tuberculin will find a place with us even as a curative agent.

5. That tuberculin treatment is *only an adjunct* to the dietetic, hygienic and open air treatment and thus it is one of the most effective methods of warfare against “The Captain of the Hosts of Death.” (*Monthly Cyclopædia and Medical Bulletin*, P. 278, May 1909.)

6. Artificial Pneumothorax. Forlanini in 1882 advocated the use of artificial pneumothorax in the treatment of chronic pulmonary tuberculosis and hæmoptysis with the object to splint the lung and thus to check the output of bacterial products from the focus of disease by introducing 300 c.c. of nitrogen gas under 4 c.m. pressure between the two layers of the pleura and thereby induce collapse of the lung. (For particulars the reader is requested to read *Lancet* 15th July 1911.)

IV. Dietetic treatment.

Each case must be dealt with on its merits.

Professor Osler has rightly remarked :—

“The healing of the tuberculous process is largely dependent on the state of nutrition, and the question of diet becomes of the first importance.”

Chronic malnutrition due to lack of proper food, defective mastication, dyspepsia, etc., is known to be a powerful predisposing cause of tuberculous infection ; but the social status and occupation of the patient must be borne in mind, because as a French politician observed on a very solemn occasion, “It is no good asking the impossible.” John F. Russell in the *Medical Record*, December 18, 1909 remarks that the cause of pulmonary tuberculosis is lime starvation and recommends raw milk and foods containing acids which transform rennet of stomach into activity.

A list of diet is given below.

- (a) Milk with plasmon.
- (b) Milk with casumen.
- (c) Virol consists of red bone marrow combined with extract of malt and eggs.
- (d) Eggs : half boiled or as egg flip.

Mircoli found that under the influence of alcohol the body acquired the power to resist the tubercle bacillus. (New York, med. Journal Jan. 1, 1910)

(e) Raw meat juice ʒii—iv morning and evening.

(f) Fresh cream with milk early in the morning

Milk-cream mixture—*its composition.*

R

Milk
Cream \overline{aa} o ss
Sac. Lactas ʒi

N. B. The cream should contain 30 per cent of butter-fat.
Dose a pint within 24 hours

(g) Plainly cooked liver, spleen, kidneys, etc, of animals as they contain urea and lecithin.

(h) Hoff's liq. malt half a bottle twice a day after meal.

(i) Sanatogen is spoken of highly by some physicians.

(j) Onion, garlic, raw carrot and cinnamon are good.

(k) Miol

(l) Ovaltine.

*N B.—Where raw meat juice cannot be had, *Zomol* is prescribed Dose :
drachm dissolved in 4oz of cold water

The Process of Preparing the Juice.—A quarter pound of fresh goat's meat is quickly chopped fine and pounded in a stone mortar. After it has been reduced to a pulp, an ounce of cold water is poured on it and again it is pounded a little. A few leaves of mint or coriander be added to flavour it. The whole mass is then squeezed in a clean piece of muslin and the clear red coloured juice is administered immediately to the patient. He should be fed every 3rd hour with an equal quantity of freshly prepared juice. Fowl meat can be used instead of mutton. I think the use of goat's meat is the best as that animal is immune to tubercle. Raw meat juice and intestinal tubercle is not a new invention by European physicians but it has been highly spoken of in ancient Hindu Medical works written over a thousand years ago.

- (m) Soups : chicken and mutton broth thickened with arrowroot or barley.
- (n) Fresh vegetables and fresh fruits in moderation.
- (o) Fresh fish of all kinds.
- (p) The juice of the plantain in tuberculosis.—Dr. J. Montelvo of Brazil, South America, has published an article in which he claims that the juice of the plantain, or the ordinary cooking banana (*musa sapientum*), works miracles in the cure of tuberculosis. He says that he was called to visit a man in the advanced stages of tuberculosis, with frequent cough, abundant expectoration, night sweats, high fever, extreme emaciation, diarrhœa, anorexia and history of tuberculosis in the family.

The juice of the plantain was ordered, preference being given to the variety known as San Tomhe, which is the strongest. A large stock of the plant, about fifty centimeters long was cut daily, and the juice expressed in the sugar mill, after which it was filtered and kept in bottles. A wine glassful of this water was taken by the patient every two hours during the day, and after three days of this treatment he was able to walk around, the cough and expectoration soon disappeared, the appetite returned, and it is claimed that after two months of this treatment there was complete convalescence. Other members of the family have also been cured of the disease by the same treatment.

The juice cannot be preserved for many days, as it is prone to ferment, thus losing its tonic properties.

N B —Avoid highly seasoned dishes.—Avoid alcohol as much as possible.
Excess of starch and sugar, tinned meat, etc, are bad.

V. Hygienic Treatment :

Plenty of food, plenty of clothes and plenty of exercise are the very essence of treatment :

Exercise too should be limited to a point short of fatigue, not to it. "The healthy man sits down because he is tired ; the consumptive should sit down so as not to become tired."

- (a) Exercise : Slow walking and massage are the best form of exercise.

The Texas Medical Journal May 1912 contains an original article stating that pulmonary consumption has been cured by persistent walking and without medicine.

(b) Dressing :

- (i) In the morning before going out for a walk the patient should wear, a natural wool vest, a natural wool combination, a flannel coat, cashmere hose, gloves and felt shoes ; the object being to avoid draft.
- (ii) During noon the same dress except the combination, the hose and the gloves.
- (iii) At night a lamb's wool vest, the combination, flannel coat, one quilt, a fascinator and a blanket.

Hygienic precautions to be taken in treating a case of tuberculosis :—

"The patient's quarters should be free from dust and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spitcups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it

should not be attempted at all. Patients should be taught the necessity of practicing lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa.

The clothing should be woollen, but not too heavy, or sweating is increased ; and a flannel night-gown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water.'—(Thompson's *Practical Medicine*)

The use of coloured light rays in the treatment of disease has passed the experimental stage. Opal light is considered to be of benefit in curing consumption—Medical Standard.

VI. Open Air Treatment :

Fresh air and sunshine are the worst foes of tubercle bacilli, the balmy mountain air, cool refreshing sea breeze, and dry desert atmosphere are free from dust and impurities and are charged with ozone. The writer has very little faith about "artificial ozone" and does not advise his patient to spend his time and purse for "so-called cure of phthisis" advertised in the papers ; he strongly recommends his patient to be far away from the abode of human habitation—to be in mountain, ocean or desert—and inhale ozone generated from the chemical laboratory of Nature ; the more you inhale the new elixir of life, the more new vigor and energy are instilled within you.

The chief characteristics are :—

(a) Of a Desert Climate.

1. Purity of air (considerable ozone).

Aurvedic method of open air treatment :—

Let the patient spend the sunny hours inside the grove of lemon trees with he-goats round about him

2. Dryness.

3. Maximum amount of sunshine and light.

N B Variation of temperature between night and day is against it

(b) Of an Alpine Climate.

1. Low Barometric pressure.

2. Dry and pure air.

3. Abundance of sunshine

4. Great actinic power.

5. Bright and clear days.

Contra-indications to a residence in high altitudes are :—

1. Anæmic conditions and organic disease of the heart and kidneys.

2. Advanced diabetes.

3. Tuberculosis of the intestine

4 Grave affection of the larynx.

5. Advanced tuberculosis of the lungs.

6. All nervous patients.

7 Irritative stage of the tuberculous process *e.g* pleurisy.

8 Too little resistive-power of the skin.

N. B. Hæmorrhage and expectoration are not contra-indicated

(c) Of a Marine Climate.

1. Freedom from dust and smoke.

2. Abundant humidity.

3. High pressure of air.

4 More equable temperature than in inland districts.

5 More wind.

6 A large amount of light and sunshine.

Dr. Goodwin recommends. (*The American Journal of clinical Medicine, Jan 1911.*)

- 1 Iodized Calcium gr ii
It relieves cough.
2. Calcium sulphide gr $\frac{1}{2}$ hourly
It is the most powerful internal antiseptic known
- 3 Sodium sulphocarbolate gr ii every 2 hours.
It is an intestinal antiseptic.

In conclusion the rational plan of treatment is open air, sunshine, mild exercise, forced feeding, suitable dress, and cod-liver oil with creasote and hypo-phosphite.

Calmette's Ophthalmic test, gives a positive reaction in the incipient stage of phthisis when there is no tubercular bacilli in the sputum

LUPUS VULGARIS.

Lupus vulgaris is a disease characterised by the formation of yellowish red nodules in the skin or mucous membrane, and subsequently by scarring and great destruction of the affected tissues and much deformity.

The disease is caused by tubercle bacillus :

Treatment.

Internally :

R

Arsenic Iodide	gr $\frac{1}{16}$
Codliver Oil with hypophosphite of Calcium and Sodium	3 ii

mft. for a dose Sig : one twice a day with an ounce of milk.

2. Byrom Bramwell recommends thyroid extract.

Locally :

Wash the lupous patch antiseptically ; scrape the part thoroughly with a volkmann's spoon.

(1) Pyrogallic acid ointment treatment.

Dr. Veile (Berlin) recommends that after destruction of the pathological tissue, either by cautery or by application of 10 per cent. pyrogallic acid ointment, the wound surface is to be treated systematically with application of pyrogallol in diminishing strength from 2 to 1 per cent.

In most cases this is followed by healing with a cicatrix that is not disfiguring.

CHOLERA.

Cholera is a specific disease caused by the "Comma" bacillus or *vibrio cholerae asiatica* of Koch, prevailing *endemically* in certain parts of India and sometimes *epidemicall*y throughout the world. It is characterised by violent vomiting, purging, cramp, collapse and suppression of urine followed by febrile reaction.

The bacilli are only found in the intestine, except in rare cases of long duration, when they may enter the blood-stream. They form powerful toxins, causing a general poisoning (toxæmia), in which the circulatory and thermal regulating mechanisms of the body are especially affected

Nature gives us the cue in the treatment by inducing vomiting and purging which are plain signs that the economy is trying to rid itself of noxious material that interferes with normal metabolism. Toxin abstracts water from the tissues causing cramps, etc

The cycle of life of Cholera bacillus.

This bacillus grows and lives in water, milk and liquid food. It is not destroyed by freezing. It is rapidly destroyed by :—

- (i) boiling. Two or three minutes boiling is sufficient, but boiling is of no use if the water is then stored in an infected vessel. It is safest to boil the water in a locked can or receptacle with a top.
- (ii) Rapid drying in the sun or fire.
- (iii) Acids
- (iv) Antiseptics.

The disease is propagated rarely by *direct* contagion, but generally by *indirect* contagion. *vis* :—

- (i) through contamination of drinking water
- (ii) ditto ditto milk.
- (iii) ditto ditto clothes.

V B —It is not carried by dust.

The bacillus is very sensitive to the acid of the gastric juice. In the intestine, where the reaction is alkaline, it grows favourably, it first acts as a saprophyte, and then enters the tissues, limiting itself to the superficial layers of the mucous membrane of the intestine, a moderate inflammatory reaction sets up desquamation of epithelium, and flakes of lymph are thrown off and passed in the rice-water stools.

Varieties.

- 1 Ambulatory type, patient walks about.
- 2 Cholérine, *i.e.*, mild type of cholera.
- 3 Cholera sicca, *i.e.*, dry form of cholera in which death occurs in a few hours after the attack, without vomiting and purging
- 4 Embolic type in which death generally occurs from pulmonary embolism.
5. Hyperpyrexia
- 6 Hæmorrhagic type.
- 7 Typhoidal type in which there is low muttering delirium.
- 8 Eruptive type in which rash appears

For practical purposes the treatment is divided into two divisions :—

1. Preventive.
11. Curative.

(i) Preventive.

The old adage that "prevention is better than cure" should be fairly well grounded into the minds of all progressive physicians :—

A. Personal :—

1. Imitate nature's way. By this the writer means to sharpen your gastric secretion which being acid is an unfavourable nidus for bacilli to thrive. Hence it is desirable to take a little salt, soaked gram and bits of ginger early in the morning on an empty stomach.
2. The reaction of the empty stomach is alkaline (Mathew Hay Ewald), the comma spirillum flourishes in alkaline but dies in acid media. Consequently don't attend a patient with an empty stomach.
3. It is a known fact that if our body be connected with the earth by means of a conductor like copper wire, the earth attracts the positive electricity of the body, thus leaving the body negative. Oxygen gas has a strong affinity for the negative state, Oxygen of the air is free and therefore is more readily absorbed through the alveoli of the lungs and the pores of the skin and thereby infuses new vigour to the system. Oxygen so to speak is the elixir of our life.
4. Rub the palm and the sole of feet where sudoriferous glands are most numerous with powdered sulphur for 15 minutes once a week during epidemics. Its empirical action is highly beneficial.
5. Cholera belt is recommended to the foreigner but not for the children of the soil.

6. Haffkin's Cholera inoculation is in its infancy and requires further trial to corroborate its efficacy.

General :—

1. Boil or better burn all soiled clothes of the patient.
2. Use strong antiseptics, *e.g.*, undiluted phenyl, hydrarg perchloride 1 in 100, to kill the germs in situ and to ward off flies etc.
3. Flies after being over the excreta carry the germs on their wings and legs, and transfer them to the food on which they rest, hence try to drive away the flies by pouring antiseptics over the excreta immediately after it is passed.
4. It is a pernicious practice to wash the soiled clothes in tanks where the bacilli multiply at a tremendous rate.
5. Soak the floor and walls of the room with the following—

Perchloride of Mercury	1 part.
Hydrochloric Acid (fort)	2 parts.
Methelyne blue q. s.	to give a colour.
Water	1,000 parts.

A B --It should be kept in an earthen or wooden vessel.

Then 24 hours later have the room lime washed with quick and chlorinated lime as follows :—

Into about a four gallon vessel put ten pounds of quick lime. Add about a gallon of water slowly. The lime if good should give off heat. When completely slaked, fill the vessel with water and stir well. Then add one pound of chlorinated lime and stir. Wash floor and walls with this

(ii). Curative.

I. Stage of invasion :—

During this stage don't try to check vomiting and purging because it is Nature's method to drive away the poison from the system.

The following are the best combinations :—

1. Saturated solution of camphor in chloroform. Drop doses in a lump of sugar every quarter or half an hour up to 4 or 5 doses

2. R

Liq. Hydrag Perchlor	mx-xx
Spt. Camphor	m x
Spt. Chloroform	m x
Aq Anisi	ad 3 ss

mft. for a dose : sig. one every hour up to 2 or 3 doses

Shake the phial well before use

- 3 Copper arsenite (1 in 5,000 sol) , dose half a drachm every quarter of an hour up to 5 or 6 doses , or 1/1000 gr. every ten minutes

- 4 Chlorodyne in brandy. Friedberger found that under the influence of alcohol the blood acquired an increased resistance against the cholera vibrio (*New York Medical journal. January, 1, 1910*).

Whatever combination you may select wrap up well the patient in a blanket , remove all sources of irritation , make the room dark ; fan his head gently. If this induces sleep, you will find him much better after waking up ; even it may cut short the disease

II. Stage of development :—

During this stage continue the medicine as mentioned above except chlorodyne, but at the same time treat him symptomatically :—

1. Vomit.

Internally.—

1. R̄

Hydrarg. Subchloride	gr. $\frac{1}{8}$
Sodii Bicarb	gr. ii

Every hour up to 3 or 4 doses :

2. Cerii oxalas Effervescence. Dose a teaspoonful every hour up to 2 or 3 doses.
3. Thick barley with lemon juice
4. Drop dose of vinum Ipecac every hour up to 2 or 3 doses.
5. Chloretone gr. ii. Every hour up to 2 doses
6. Hot coffee acts sometimes miraculously when other medicines have failed.

Locally.—

1. Mustard plaster 6" × 4" over epigastrium
2. Mustard plaster 2" × 1" just outside the angle of jaw over the anterior margin of sterno-mastoid muscle to stimulate Vagus.

2. Diarrhœa.

Gripe per mouth.—

R̄

Bismuth Subgallate	gr v-x
Tennigen	gr v
Salol	gr. ii
Pulv. Cretæ aromatic	gr. x

mft. for a pulv : sig. one every 2 hours up to 3 or 4 doses.

Give per rectum—

1 per cent. sol. of Tannic acid in whey is highly beneficial ,
It is used for its antiseptic and not for its astringent property.

N. B 1. Don't give opium in any shape during this and subsequent stages, because it is not absorbed during the collapse stage , and when the patient passes to the stage of reaction as absorption takes in he may die from opium poisoning rather than from the disease itself.

2. Don't give powerful astringent enema for checking diarrhoea at once and thereby make yourself ridiculous like an attempt to cork an open aerated soda water bottle.

For vomiting and purging :—application of Spinal Ice bag over the vertebral column soothes sympathetic system and thereby abates vomiting and purging.

It is a custom amongst some of the hill tribes of India to bring patients suffering from cholera by the side of a falling cascade. They are of opinion that there presides a deity who bewitches patients by inducing sleep and thereby cures the sufferers. The real explanation seems to me that cool atmosphere of the cascade soothes well the sympathetic system ; besides it is a known fact that stimulus upon stimulus till stimuli are in the zenith, is followed by paralysis. Hence constant monotonous stimuli on auditory nerve filaments by the ever-ringing noise of falling water, end in paralysing them, and thereby induce sleep ; after a sound-sleep, the patient wakes up full of vigour.

III. Stage of collapse —

Internally—

The following is our sheet anchor, —

℞

1. Saline injection—

a Soloid Sodii Chloride gr. xxx (B. W. & Co.)

or

b Soloid Sodii Chloride Co (B W. & Co.)

Two of any (either of *a.* or *b*) are to be dissolved in a pint of boiled distilled water for subcutaneous or rectal injection.

N B.—For practical test the heat which our elbow can bear is quite sufficient for injection.

Methods of replacing the loss of fluids in Cholera.

There is a variety of ways of introducing fluid into the system —

1. *Per mouth* —

Although the saline solution is frequently vomited some toxin is probably evacuated with it.

2 *Rectal injection* —

A pint of saline by the rectum every two hours will suffice to tide the patient over the danger of a collapse.

3 *Sub-cutaneous injection* :—4 *Intra-abdominal injection* :—

As advocated by Leonard Rogers.

The hypertonic solution, the formula of which is given below, has been best administered sub-cutaneously or intraperitoneally.

℞

Sodii chloride	3 ii
Calcium chloride	gr iii
Aq. Distil	O-j

Method of intra-peritoneal injection —

(*Read at the Bombay Medical Congress*)

It consists of a small silver plated steel tube with one end sharpened like a cork borer and a flange two inches above to prevent it slipping in too far. A blunt stillette suffices for cleaning the tube when necessary. A small incision is made with a tenotomy, or other narrow-bladed knife, through the skin and fascia of the anterior abdominal wall just below the navel, where the peritoneum is adherent. The tube is inserted into the wound, and with a boring movement can readily be made to enter the peritoneal cavity without any chance of injuring the intestines. From 3 to 4 pints can readily be run through in about ten minutes, the little operation being thus much quicker and easier than intravenous injections. If any pulse remain, the fluid is rapidly absorbed, so that it can be used in all but absolutely moribund patients, in whom immediate intravenous injection is essential. An abdominal binder applied after the injection raises the blood pressure and facilitates absorption. The injections can easily be repeated through the same perforation, a superficial stitch and some collodion on cotton wool being afterwards applied. When a large number of cases have to be treated with a small staff, this method promises to be of great value.

5 *Intravenous injections*. —

It is difficult to carry out in private practice. Take blood pressure daily with the mercury manometer (Riva-Rocci's instrument) with the result of demonstrating that every patient whose blood pressure remained for several days below 100 m. m. died

with uræmic symptoms (*Therapeutic Gazette*
November 15 1909)

6. *Submerging the body except face, in tepid saline solution for 10 minutes , repeat this process if required*

Leonard Rogers recommends the following measures to raise the blood pressure—

- (i) Half to one pint of normal saline solution is given per rectum every 2 to 4 hours, 5 min of a 1-in-1000 sol. of adrenalin chloride being added to each first.
- (ii) Dry cupping over the kidneys is carried out morning and evening to relieve congestion
- (iii) Digitalin gr 1/100 is given subcutaneously twice a day , if this fails strophanthin up to 1/100 of a grain, is administered intravenously

Vaporole 'Infundin' 5 c. c.--- 1 c. c to be injected intramuscularly or per rectum in normal saline

- 2 Cardiac tonic stimulant and diuretic—

- (a) Tabloid Digitaline gr 1/100 every 2 hours
- (b) Tabloid Spartini sulph gr 1 every 2 hours

N B. —Stychnine sulph though largely used during this stage is contra-indicated because—

- (i) it increases peristaltic action of the intestine.
- (ii) it promotes congestion to already congested lungs
- (iii) first injection temporarily raises blood pressure, second injection raises blood pressure but its duration is less, while in third or fourth injection there is no appreciable rise of temperature (*Blood pressure in Surgery by Crile*)

- (iv) it is not a diuretic

3. Sulphuric ether hypodermically

Ether should not be employed, as the skin of choleric patients, being devoid of elasticity and turgescence seems to

present a tendency to necrosis, even more than the normal skin.

(*Twentieth Century Practice of Medicine* vol. XII p 436)

4. Amyl nitrite inhalation or Nitroglycerine tabloid followed by brandy

5. Subcutaneous injection of camphorated oil is of benefit.

(*Twentieth Century Practice of Medicine* vol. XIV p. 436)

Locally :—

1 Hot bottles on the body :

Roll the bottles cautiously , don't blister him as sensation is much impaired during this stage . the writer has bitter experience of observing some.

2. Hot blankets over the body.

3. Rub extremities well with the following —

Rx

Pulv. mustard

Pulv, ginger

Pulv. Violet

aa ʒ i

It not only stimulates the part, but clogs the pores and thereby preserves internal heat of the body

Treat the patient Symptomatically.

1. Thirst—

(i) Iced champagne with soda water European patients like this very much.

(ii) Iced cocoanut water.

(iii) Iced palm water.

(iv) Fried rice water iced

(v) Iced orange to suck.

2. Cramps —

a Inhalation.

Chloroform. It must be administered by a medical man. It is dangerous to allow lay men to have chloroform at their hand.

(b) Locally—

1. Rub one nutmeg in turpentine, mix it with little warm water ; rub the affected limbs well.

℞

Lint Belladonna

Lint. Chloroformi

Lint. Menthol

Lint Saponis aa ʒ i

mft, to be rubbed well.

2. Immerse the body in tepid water, it relieves cramps.

(c) Internally—

Atropine Sulph. gr. 1/100 tabloid, but it is to be used with caution

3. Delirium.—

Tabloid trinitrini,

One every 2 hours up to 3 or 4 doses

4. Suppression of Urine —

(a) Locally :—

- 1 Cupping on the loins.
2. Constant application of bran poultices over the loins.
3. Passing of soft catheter per urethra mechanically irritate the urinary system and thereby aids the formation and flow of urine from kidney to bladder.

(b) *Internally :*

1. Tinc. Cantharidis in drop dose acts nicely :—

R̄

Tinc. Cantharidis	m. i
Ext. Punornaba liq. (Bengal)	ʒ i
Aq. Distil	ad. ʒ i

mft. for a dose : sig. one every 2 hours up to 2 or 3 doses.

2. Agurine gr. v in water paper every 2 hours upto 2 doses.

3 R̄

Pot Acetas	gr. x
Spt Etheris Nitrosi	m. xx
Spt. Juniper	m. xx
Inf. Buchu	ad. ʒ i

mft. for a dose : sig. one every 2 hours up to 3 or 4 doses.

V. Stage of Reaction —

Diffusible stimulant is best—

R̄

Spt. Ammoniā Aromaticus	m. x-xx
Spt. Chloroformi	m. x
Inf. Digitalis	ʒ i
Tinc. musk	m. x-xx
Dec. Scoparii	ad. ʒ i

mft. for a dose : sig. one every 3 hours upto 4 or 5 doses.

Treat complications according to symptoms.

Dietetic treatment of Cholera.

During stages of invasion, development and Collapse, stop giving all diets except—

1. Iced cocoanut water.

2. R̄

Sodii Chloride	gr. iv
Acid. Hydrochloric (Dil)	m. x
Iced Aq. Anisi	ad. o. j

dose ad. libitum.

3. Fresh fruit juice, *i.e.*, pomegranate, grape. etc.

4. Freshly made raw meat juice may be allowed with discretion.

5 R

Powder " Indra jab "	4 tolla.
Water	1 seer.

Boil ; when water is reduced to 3 poas, take it off from the fire ; add ice. Dose ad libitum, it checks diarrhoea and cramps.

- N. B. 1 —Don't give milk in any shape during these stages.
2. Don't give the white muddy part of ice which is the very cradle of germs and impurities ; give freely bits of crystalline part of ice to suck
 3. Don't hesitate in giving Aqua freely in some shape or other. The more you give him to drink to his heart's content slowly but cautiously, the more the man eliminates toxin from his system.

During the stage of reaction—

1. Lemon whey : Heat a cup of pure milk over hot water ; add fresh lemon juice ; cook without stirring until the whey separates ; filter it ; add a pinch of common salt to the filtrate. Dose ad libitum.
2. White wine whey ; To a pint of boiling milk add 3. oz of purest Sherry , prepare as above. Dose ad libitum.

During Convalescence—

The following is the ideal menu of diet as recommended by the writer :—

- 7 A.M.—6 ozs. of fermented milk.
- 10 A.M.—Fine old rice with soups of " gadhal " leaves and " singhe " fish ; fresh curd salted.
- 1 P.M.—6 ozs. of fermented milk.
- 4 P.M.—Fruit juices e.g., pomegranate, oranges, grapes, etc.
- 7 P.M.—Rice treatment without curd.

N B —At night if hungry feed the patient with Horlick's malted milk dissolved in warm water

DYSENTERY

Dysentery —Is caused *not by one bacillus but by many bacilli belonging to the Shiga group* and by amoebae. The former is called Acute Epidemic or Bacillary Dysentery, the latter Amoebic Dysentery. According to Dr. Galli Velerio (*New York Medical Record October 9th, 1909*) the disease in all its varieties is spread chiefly by—

- (1) personal contagion either from sick persons or from healthy “carriers” of the bacilli, and either, directly or through fomites,
- (2) water, which plays a most important role in the spread of the disease,
- (3) flies as proved by experiments,
- (4) milk, which may be infected by flies or by the addition of infected water, or by the washing of vessels with such water,
- (5) vegetables,
- (6) the soil and dust,

N. B. Unfortunately, sand filtration, which is so effective in the prevention of typhoid fever, and of bacillary dysentery, is of no avail here, since the amebas pass through even the best sand filters.

The main prophylactic measures recommended are placed under the following headings :

1. As rapid diagnosis of the first cases as possible ;
2. Compulsory notification of all cases ;
3. Strict isolation of the sick ;
4. Disinfection of the excreta, linen, &c, and of the room occupied by the sick,

Acute Epidemic Dysentery.

1. It is commonly present in temperate and subtropical climates.

2. An acute attack of this form of dysentery, even although mild, may leave a chronic infection of the bowel, the individual thus becoming a dysentery carrier, capable of transmitting the disease wherever he goes

3. It is caused by the bacillus of Shiga

4. It does not tend to cause ulceration of the intestines.

5. It does not tend to cause hepatic abscess.

6. Ipecacuanha is of little or no value.

Amœbic Dysentery.

1. It is more common in the tropics.

2. It is decidedly a chronic disease. The majority of the attacks occur after the heavy rains of the early summer months.

3. It is caused by amœba.

4. It tends to cause ulceration of the intestines.

5. It tends to cause hepatic abscess.

6. Ipecacuanha is of value.

Quinine with dilute sulphuric acid is also beneficial.

The distinction between the two forms of dysentery may be inferred from a study of the symptoms as herein suggested, and confirmed by a bacteriologic examination of the stools. This is not a particularly pleasant work, but the physician who fails to avail himself of precision in diagnosis for such a reason as this has mistaken his profession and would better give up practice and become a salesman in the perfumery department of a drugstore.

Treatment of Dysentery.

Dysentery is divided for practical treatment into 2 forms—

A. Acute.

B. Chronic.

A Acute

Internally—

Ipecacuanha treatment —

Large doses of ipecacuanha have been prescribed ; it arrests the inflammatory action in the bowel, checks the liquid and bloody evacuations and often effects a complete cure

The modern method of giving big doses of ipecac in dysentery is in keratin coated tablets, so it will pass through the stomach unchanged. Thus administered it is said 20 grains may be given at a dose. Emetine might be administered in a similar way—

Tabloid Emetine Hydrochloride gr $\frac{1}{2}$ (Keratin-coated) is administered orally to facilitate its action in the intestine.

Emetine Hydrochloride gr. $\frac{1}{2}$ sterilised solution (P. D. & Co.) or Vaporole Emetine Hydrochloride gr. $\frac{1}{2}$ (B. W. & Co.) hypodermically affords excellent result in amoebic dysentery, hepatitis, liver abscess and tropical spleen abscess.

New method of saline treatment :—

Internally.

1. Magnesium sulphate in the shape of following prescription.

℞	
Mag. Sulph.	3 i.
Acid sulphuric aromatic	m. v.
Tinc. Zingiberis	m. v.
Aq. Cinnamomi	ad. 3i.

for a dose : sig. one every 2 hours.

2. Sodium sulphate as in the prescription given below :—

℞	
Sodii Sulph.	3 i.
Liq. Hydrarg perchloride	m. x.
Tinc. Belladonna	m. iii.
Glycerine	m. x.
Aq. Cinnamomi	ad. 3 i.

mft. for a dose : sig. one every 2 hours.

Whatever combinations you select, go on prescribing the mixture as long as there is mucus, and blood in the stool ; when colon is flushed with watery fluid it expels the mucus so long coming out bit by bit, and which is the prolific source of tormina and tenesmus. When you notice thin watery stool, stop giving the above mixtures and prescribe the following :—

R

Bismuth subgallate	gr. x
Tannigen	gr. vii
Dover's powder	gr. iiss
Benzo-naphthol	gr. ii

mft. for a pulv sig. one every 2 hours.

When temperature becomes normal, stool semi-solid or solid, no tenesmus and griping, etc, treat the patient for which he is ailing so long :

(a) in malarial cases Quinine acid hydrochloride gr. v (Parke Davis & Co) morning and evening ; and the following :—

R

Ammon chloride	gr. v
Pulv. Ipecac	gr. v
Liq. opii. sedativus	m. x
Mucilage Acacia.	ʒ ii
Aq. Cinnamomi	ad. ʒ i

mft. for a dose : sig. one every 4 hours.

(b) in Scorbutic cases lemon, oranges, fresh "belæ" fruit.

When motion contains dark liquid blood give the following :—

R

Oil Turpentine	m xv
Almond oil emulsion	ʒ i

It acts like a charm.

(c) In Liver cases ammon chloride is best.

- (d) In pregnant cases drachm dose of peptone wine with half a drachm dose of chlorodyne thrice a day.

Per rectum.—

Authorities differ regarding enema in acute dysentery :

The second volume of Allbutt's system of medicine contains an excellent article by Dr. Andrew Davidson in which he states that a large tepid boracic water enema is often useful at the beginning of acute dysentery.

Dr. Manson on Tropical disease 1898, distinctly states that "this splendid remedy must never be practised when acute symptoms are present."

Dr. Osler in his Practice of Medicine said that he regarded enemata in cases of acute dysentery with some disfavour on account of the acute pain caused when the diseased bowel was filled with fluid.

Major Davidson R.A.M.C., was of opinion that antiseptic injections would do good by acting locally :

The writer is against the use of this heroic treatment in acute stage of the disease.

Externally.—

1. Foment the left iliac region with the following :—

R

Folia Cannabis Indica.

Sodii chloride aa equal part.

mft. rub them well, put them in a small flannel bag, warm it over fire when it is ready for use.

Hot fomentations to the abdomen may give the patient a feeling of comfort and aid in relieving pain.

2. Apply the following over the above region.

R

Ichthyol

ʒiv

Ext. Belladonna

ʒiv

Glycerine

ad. ʒii

Cover the part with oil silk.

3. Linseed-meal poultice over the whole of the abdomen ; it should be changed before it begins to get cool.

4. Spongio-piline placed in hot water and sprinkled with turpentine.

NB —Whatever combination you select wrap the whole of the abdomen with absorbent cotton.

The serum treatment in dysentery.

Shiga's rules for the administration of the polyvalent serum are :—

- i. In mild cases inject one dose of 10 c c.
- ii In cases of medium severity inject two doses of 10 c. c. at intervals of six hours.
- iii. In severe cases inject 10 c. c. twice a day at intervals of six hours for two or three consecutive days.

Advantages :—

1. It ameliorates the symptoms.
2. It hastens the cure.

Disadvantages :—

1. Urticarial-like eruptions on the body.
2. Pain in the Joints.

Calcium Chloride gr. xv may be administered if these symptoms are severe.

(*A system of Medicine by Osler and McCrae, Vol. ii, p.799*).

B. Chronic form.

Internally :—

Open the bowel by castor oil emulsion as the following :—

R

Olei Ricini	℥ii
Liq. Opii sedativus	m.v
Mucilage acacia q.s.	
Aq. camph	ad ℥i

mft. for a dose : sig. one every 4 hours

N. B.—Opium arrests peristalsis and causes an accumulation in the bowel of matter that should be expelled.

When bowel becomes loose and free, prescribe any of the following :—

(1) R

Ferri alum	gr ½
Salol	gr.ii
Pulv. Doveris	gr.iiiss
Lacto peptin	gr.x

mft. for a pulv : sig. one every 4 hours till the stools become semi-solid or solid.

(2) R

Acid Sulphuric Aromatic	m. xv
Tinc. Catechu	m. xv
Tinc. Kino	m. xv
Spt. Chloroform	m. x
Aq. Cinnamomi	ad. ℥ i.

mft. for a dose : sig. thrice a day.

When stools become semi-solid or solid prescribe the following :—

R

Glycothymolin	℥ iiss
Ext. Cinchona Liq.	℥ iss
Ext. Belæ liq.	℥ i
Ext. Kurchæ liq.	℥ i
Syr. Hemidesmus	ad ℥ iv

Dose a dessertspoonful in an ounce of Cinnamon water thrice daily.

Liq. Bismuth et. Pepsin Co. (Howlett's in drachm doses thrice daily after meal acts admirably well.

Per rectum.

Buttocks are raised about a foot by inserting a soft pillow under them, above the level of the shoulders and the colon is thoroughly irrigated by means of a double-flow colon tube with sterile water or weak boric solution until the washings are quite clear; then inject in ordinary cases the following:—

R

Dover's powder.

Gallic acid

â a gr. x.

In half a pint of rice water.

* If there be slough, irrigate the colon with either of the following:—

Quinine Hydrochloride 1 in 5,000 (Losch).

one or two pints.

2. Argentı nitras gr. xx to a pint of distilled water: one or two pints: some of the modified preparations of silver like Protargol, Nargol are highly beneficial:

R

Protargol
Aq. Distil

gr.xx
o i

R

Nargol
Aq Distil

gr. xx
o. i

Two pints are to be used to wash the colon with a long rubber tube under gentle hydrostatic pressure.

3. R

Copper sulphate.

Tinc. opii

Starch

Aq. Distil

gr.xv

m.xv

3 i

o. ii

To be used like above.

* *NR* —After thorough irrigation of the colon with any of the above, allow it to be out by a double flow colon tube.

4. Sulphocarbonate of copper, 1 grain to the ounce, copper having proved exceedingly effective against many microorganisms. The injection should be given once a day, and I believe that, after it has been employed, it is well to wash out the bowels with a saline solution.

5. Harris recommends the following formula :—

R

Hydrogen peroxide	1 part.
Aq. Distil	8 parts.

mft. about a quart is injected twice daily, which, after a week, may be gradually decreased

(*Twentieth Century Practice of medicine vol xvi Page 299*).

Irrigation of the Intestines.—The difference between injection and irrigation is that the latter aims to clear the bowel of its decomposing contents so far as this may be done ; to make it clean and to keep it so ; to treat it, therefore, as an external wound would be treated according to antiseptic methods.

Every physician should carefully and repeatedly examine the stools of his patients for parasites before discontinuing the local treatment. The parasites appear to persist, chiefly owing to their burrowing in the submucosa where we are not able to reach them by local treatment. In those cases in which the lesions have healed and the parasites still persist, the time to discontinue treatment is important. (*A system of Medicine by Osler and McCrae Vol. I, Page 524.*)

In subacute or chronic cases the vaccine treatment first introduced for dysentery by Castellani and Greig, may be tried, using Vaccines prepared from the dysenteric bacilli isolated from the stools of the patient.

Hygienic treatment.

1. Put him to bed at once ; rest is an important curative agent.
2. Keep him in a dry airy room.
3. Try to remove all sources of irritation both physical and mental.
4. Clothes and beddings should be changed often.
5. Use plenty of essences to perfume the atmosphere of the room
6. Pour antiseptics over stools before removal.
7. Disinfect all soiled clothes thoroughly.

Dietetic treatment.

One of the most important point in the treatment of dysentery is the diet. All food should be given lukewarm, neither hot nor cold. In mild cases milk may be suitable, but frequently it is not so on account of the large wastage produced, and also because of the irritating properties of its curd. In all except the mildest cases I think whey or albumen water is far preferable to milk, and while the symptoms are acute, a total of two or three pints, at the most of liquid nourishment in the twenty-four hours is quite sufficient. It may be remembered that many cases of even simple diarrhoea do not improve till whey or albumen water is given instead of milk. (*Major N. Faichnie, M. B. British Medical Journal.*)

1. Plasmon, arrowroot and goat's milk.
2. Benger's food and goat's milk.
3. Barley and peptonised goat's milk.
4. Fermented milk.

5. (a) "Banana" powder and milk.

(b) Boil raw "banana" fruit in water ; when the pulp becomes soft, remove the rind ; add peptonised milk to the soft pulp to make it a soft pultaceous mass.

6. Juice of burnt pomegranate.

7. Decoction of "Singee" fish.

8. Decoction of "Indrajab" and "Ishafgool", of each gr. v.

9. Burnt raw "belæ" fruit either to be taken alone or to be mixed with milk.

10. Pulv : "Ishafgool" is very efficacious.

11. 'Belæ' water is strongly recommended..

12. Juice extracted from the rind of mangosteen is very efficacious.

At the recent meeting of the British Medical Association Cantlie dealt with the treatment of what he termed chronic recurrent dysentery. He is of the opinion that drugs have little effect upon the condition and that diet should aim at the administration of food causing but a minimum of excretion. All farinaceous foods should be excluded from the diet and milk completely withheld. Pounded meat, eggs jellies etc, should constitute the means of sustenance when an attempt is made to control local congestion in the sigmoid. Enemata are useful, and warm sea water is the best fluid for this purpose.

During convalescence.

1. To a freshly made fine "cheera mund," add little honey and rose water : Dose ad libitum.

2. To a freshly made fine "cheera mund" add fresh curd "murtoman" plantain and little salt.

3. "Luchi" fresh from the pan to be eaten salted.

4. Burnt onion.

* TYPHOID FEVER.

Enteric fever is an acute infectious fever caused by Eberth's bacillus and characterised *clinically* by a gradual onset, followed by a period of continuous fever with diarrhoea, an enlarged spleen, tympanites, a roseolar rash and a duration of four weeks' suffering, and *anatomically* by more or less extensive ulcerations affecting, peyer's patches in the ileum with swelling of the mesenteric glands and enlargement of the spleen.

It occurs endemically and sometimes epidemically.

Cycle of typhoid bacillus :—

The typhoid bacillus is very hardy ; it will live in the ground for months, and in water for weeks, and will stand drying for several days.

The bacillus enters the mouth in some way, usually in food or drink, runs the gauntlet of the stomach with its solution of hydrochloric acid, enters the small intestine, attacks the lymph follicles and glands of peyer.

Here we have :—

1. Hyperemia : it occupies first week.
2. Medullary infiltration : it occurs at the beginning of the second week, and is of brief duration.
3. Involution of the medullary swelling occurs in the absorption of the diseased product, or more frequently in the form of necrosis with subsequent exfoliation and the formation of ulcers. Both varieties are observed in the same intestine in the same locality. In fact, nearly all of the processes

* "Typhoid fever is a Protean disease, whether considered in its clinical, its pathological, or its bacteriological aspects"—*Flexner*.

described can be observed at the same time in the same locality of the bowel.

Thus we find *necrotic destruction, sloughing and ulceration.*

4. Cicatrization : it occupies a long time.

Typhoid bacillus infects mesenteric glands, circulates freely in the blood and in the rose spots, lodges in spleen and excretes in the urine.

It remains in a dormant state for years in human blood as "typhoid carriers." *To distinguish the typhoid bacillus from the colon bacillus :* (1) On gelatin plates, the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contain sugar ; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours , the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol , the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum ; the colon bacillus does not.

Typhoid Bacillus

1. Non-lactose fermenter, hence does not cause evolution of gas in media containing sugar.
2. No indol in peptone water.
3. Does not curdle milk,
4. It is iridescent.
5. It is larger.

Bacterium coli commune

1. Lactose fermenter, hence causes evolution of gas in media containing sugar.
2. Indol is produced in 48 h. at 37° in peptone water.
3. Curdles sterilised milk.
4. It is not iridescent.
5. It is smaller.

N.B.—It is an established bacteriological fact that colon group cannot in any way approach the typhoid group in essential characters, at any rate *in vitro*, whatever they do in nature.

Hence the rational plan would be to use antiseptics

The indications for intestinal antiseptics are :—

- (i) To destroy a very large portion of the specific bacilli and their own toxin, which are colonised in the small intestine, thereby assisting in the prevention of further invasion of the blood-stream and extension of infection.
- (ii) To neutralize the toxins of perverted digestion due to the derangement of mechanism and perversion of secretion concomitant with the attack.
- (iii) To limit absorption of toxins and the depressing effect on the human economy, thus making it more able to resist the invasion of the germs and their poison.
- (iv) To render the feeding ground of the bacillus less desirable for their propagation and by so doing, diminish their numbers.

In this manner a severe type of the disease is modified and complications—high fever, great depression, loss of weight—usually are avoided. When typhoid germs have reached the blood-stream, the case is usually well advanced and the natural resistance is largely overcome. It is more difficult to master this condition, especially if the germs are present in large numbers

Varieties of enteric

(Dreschfield classification.)

1. Abortive
2. Mild.
3. Ambulatory.
4. Grave.

- (a). Bilious.
- (b). Ataxic.
- (c). Adynamic.
- (d). Hæmorrhagic.
- 6. Spleno-typhoid.
- 7. Enteric in children.
 - (a). Respiratory.
 - (b). Meningeal.
 - (c). Spinal.
- 8. Enteric in old age.
- 9. Malarial-typhoid.
- 10. Epidemic.

The treatment is grouped under two broad divisions :—

- i. Preventive.
- ii. Curative.

1 Preventive.

The prevention of typhoid depends upon sanitary measures. *viz.*, boil water or milk before drinking, ward off flies by pouring plenty of antiseptics over the excreta, boil or better burn all soiled clothes, protect people by vaccination and according to Major Russell isolate the patient as this disease is contagious.

The following may be used with advantage :—

R_x

Quinine hydroch	gr ii
Acid hydrochloric dil	m. iv
Tinc. aurantii	m. x
Aq. aurantii floris	ad. ʒi

mft. for a dose: sig. one twice a day, morning and evening.

11 Curative.

(i) Stage of incubation—

Nothing can cut short the disease ; it will have its own course.

(ii) Stage of development—

Don't try to nip the fever in the bud by giving strong antipyretics as phenacetin or the like ; to act against nature, as four weeks are the duration of enteric, leads to nasty failure. Phenacetin or acetanilid reduces leucocytosis. Why reduce the army when your country is invaded ?

The microbe of typhoid fever by virtue of its special "proclivity" attacks Peyer's patches in the small intestine, which become inflamed, swollen and ulcerated : the result being—

A. Fever.

B Tympanites, gurgling. &c., (due to fermentation)

C. Hæmorrhage.

A. Fever

Internally—

I. The following combination acts nicely :—

R̄

Liq ammon citratis	ʒii
Sodii chloras	gr.v
Sodii sulphocarbolas	gr iii
Tinc. aurantii	m x
Aq. aurantii floris	ad. ʒi

mft. for a dose : sig. one every four hours up to 3 doses within 24 hours.

As pointed out before it is a mistake to force or club the temperature down with coal-tar products, for it will surely take another upward jump as soon as the action of the drug ceases. The only way to control the temperature lasting is :—

(i) to eliminate the cause.

(ii) to counteract the toxic effects,

(iii) to recourse to hydrotherapy.

N.B.—The sulphocarbolates fulfil (i) and (ii) indications nicely.

2. (a) Abbott's Sulphocarbolate Co: pill of calcium Sodium and zinc: is very efficacious; it should be given finely powdered.

or.

(b) *R*

Sodii sulphocarbolas	gr.iii
Calci "	gr.iss
Zinc "	gr. 1/2
Tinc: aurantii	m.x
Aq aurantii floris	ad. ʒi

mft. for a dose, sig. one thrice a day.

3. Vini gallici ʒi-ii within 24 hours.

One ounce of pure alcohol is worth 200 calories.

4. Burney Yeo's chlorine mixture with quinine:—

The solution is made in the following manner:—

Into a twelve ounce stoppered bottle put thirty grains of potassium chlorate, and pour in sixty minims of strong hydrochloric acid; keep it closed until it has become filled with greenish-yellow chlorine gas; shake the mixture well, and then pour water into the bottle little by little, closing and shaking well at each addition, until the bottle is full. To this solution add twenty-four grains of quinine hydrochloride and an ounce of syrup aurantii. The dose is an ounce every four hours.

The writer has had the bitter experience of observing bronchitis in most of his cases where this mixture has been tried. Nascent chlorine gas irritates the respiratory tract during the act of deglutition and has been the prolific source of bronchitis.

B.—Wrap up the phial with blue paper or dispense the medicine in a blue stoppered phial to prevent light to act on its contents,

5. Kolipinski's calcium creosote solution. (*Monthly cyclopædia and Med Bulletin, June 1909*)

"Calcium creosote acts as an efficient non-poisonous antiseptic to the mouth cavity, stomach and intestine. It deodorizes and disinfects the stools. It slows and strengthens the respiration, refreshes and revives the patient, prevents toxemia and delirium, reduces the fever in three days, makes the hyperpyrexia innocuous and stops the disease in one-half the time of its natural course. It reduces the mortality to the lowest number. As the deaths are lessened, so are the many complications, and above all do intestinal hæmorrhage and intestinal perforation diminish, they may even be said to cease to occur."

How calcium creosote is prepared?

"Take an excess of calcium hydrate, freshly prepared, four or five pounds and having introduced it into a suitable percolator, add with stirring a pound of creosote. In a little while when the mass begins to cool, pour upon it enough water to convert the whole into a megma or thick fluid. Collect the solution by slow percolation. The specific gravity should be 1010-1012. If the first liquid collected is less than this, return it into the percolator. When most of the calcium creosote is dissolved as is evident by the sudden sinking of the specific gravity, add another pound of creosote to the residue and resume the process. A pound of creosote yields twenty pints of calcium creosote solution. It is a light refracting reddish-yellow liquid becoming brown on keeping and depositing, on exposure to air, a precipitate of calcium carbonate. It has the odour of creosote and a smart peppery taste but no irritating or caustic effect on tegumentary membranes. It has a strong, alkaline reaction. Its antiseptic properties are like those of creosote. It is a good preservative for meat, for animal specimens and for urines,

The proper doses of calcium creosote are : for an infant of one year, from three to five drops in water every 2 or 3 hours. For a child of six to eight years one teaspoonful as often as the former ; for an adult, two to four teaspoonfuls in a tumbler-glass or less of water. These quantities can often be given night and day."

6. Carter (The Medical Brief Nov. 1910) recommends Helmitol, dose being grs. ten, every 2 hours right along till temperature falls. Drink a glass of water with each dose.

Dr. Carter assures us that one day of honest testing is worth a year of argument.

Externally :—

1. Cold bath as advocated by Professor Hare. Some of the best English Clinicians like Sir W. Jenner and others are not in favour of cold bath treatment, besides it is difficult to carry out this cold bath treatment in private practice.
 2. Cold air baths may be used by placing ice in a tray suspended from a cradle under the bed cloths.
- (*Fevers in the Tropics by Leonard Rogers, p. 143*)
3. Cold sponging with aromatic vinegar.
 4. Wet pack.
 5. Tepid sponging with aromatic vinegar. Hydrotherapy reduces temperature and at the same time stimulates heart, while drugs reduce temperature and depress the heart.
 6. Guaiacol, a derivative of beechwood creosote causes a prompt fall of temperature when painted on the skin of a febrile patient (*Twentieth Century Practice of Medicine Vol. XVI page 732.*) but the fall of temperature is temporary and is accompanied by

alarming symptoms of depression. The use of guaiacol is therefore open to the same objection as that of the coal-tar derivatives.

Per rectum :—

Arnold (*British Medical Journal*, July 23rd, 1910) recommends the following .—

℞

Turpentine oil	ʒi
Olive oil	o. i

mft. to be given as enema from the first day of treatment.

It should be administered on alternate days reducing turpentine to drachm four.

Turpentine and olive oil effectually prevent any accumulation.

B. Tympanites, gurgling, etc. (due to fermentation).

Internally :—

1. ℞

Benzo-naphthol	gr. iiii
Sac. Lactis	gr. v

mft. for a pulv : sig. one twice a day.

Or

2. ℞

Hydrarg subchloride	gr. ʒ
Sodii Bicarb	gr. v

mft. for a pulv : sig. one twice a day.

Any of the above is not absorbed throughout the alimentary tract, besides it is antiseptic ; it prevents butyric acid fermentation—a fermentation brought about by micro-organism, checks the formation of products of decomposition usually found in the digestive tract (indol, skatol) and does not interfere with the action of the unorganised ferments of the saliva, gastric and pancreatic juices (Wasseljiff).

3. Acetozone (or Benzoyl-Acetyl-Peroxide) of *Parke, Davis & Co.*

It may be administered either in capsule or solution.

One or two grs. of Acetozone diluted with sugar of milk, liquorice powder, &c, may be administered in capsules every 6 hours.

R.

Acetozone	gr. xx
Syrup. Aurantii	ʒi
Aq. distil.	o. i

mft. shake the bottle briskly for a few minutes before administration. Dose ad. libitum.

N.B.—The writer invariably uses in a routine fashion acetozone water in almost every case with marked success.

Acetozone is a powerful germicide, water causes defervescence by its tonic action on the nervous system.

We know *now* that it is due to its production of leucocytosis and the consequent anti-bodies; in other words it increases the army of resistance.

4. Olive oil ʒi within 24 hours is said to have a soothing action over the ulcers and thereby promotes healthy granulation.

Externally :—

1. Turpentine stupe over the whole of abdomen.

A flannel roller is placed beneath the patient, and then a double layer of thin flannel, wrung out of very hot water, with a drachm of turpentine mixed with water, is applied to the abdomen and covered with the ends of the roller. (*Sir William Jenner's Method*)

2. Spongio-piline placed in hot water and sprinkled with turpentine.

3. Wrap up the whole of abdomen with absorbent cotton to preserve uniform heat.

Per rectum :—

Riesmann (Wien. Med. Woch 1910. col. 2071) recommends enema of two to four quarts of physiologic salt solution daily with wonderful effect. It increases diuresis, improves nervous symptoms and evidently increases the elimination of the toxins.

C. Hæmorrhage :—

General direction :—

Absolute rest both physical and mental, low diet, *eg.*, small quantity of whey and white of egg beaten up together, and ice to suck.

Nature herself plugs the bleeding vessels with a clot, and not through any action of the remedy.

Internally :—

1. Solution of Adrenalin Chloride (1 in 1000) *Parke Davis & Co.*

Five drops in a little cool saline water every 3 hours upto 4 or 5 doses within a day.

Wiggers has pointed out that large doses of adrenalin cause a preliminary increase in hæmorrhage followed rapidly by a decrease or cessation of bleeding. This increase is due to the contraction of blood vessels in other portions of the body.

2. R

Calcium chloride	gr.x—xx
Liq. Morphinæ Hydroch	m.v—x
Aq. chloroformi	ad.ʒi

mft. for a dose : sig. one every 4 hours upto 3 doses.

It is too slowly absorbed, if absorbed at all, to produce any effects (*Professor Hare*).

3. R

Acidi Tannici	gr. x
Liq. Morphinae hydro.	m x
Spt. Terebinth	m.xv
Mucilage acacia	ʒii
Tinc. Chloroformi Co.	m.x
Aq. menth pip	ad. ʒi

mft for a dose : Sig. one every 4 hours upto 3 doses.

4. R

Tinc. Hamamelis	m.v
Nepanthe	m.v
Aq. Cinnamomi	ad. ʒi

mft. for a dose : sig, one every 3 hours up to 4 doses.

Dr. Niles condemns the use of opium in intestinal hæmorrhage, chiefly on the ground that it locks up the bowels and so causes the retention of putrefying blood.

5. Local applications of gelatin have been repeatedly used for the purpose of checking hæmorrhage, and the employment of weak gelatin preparations by the mouth—10 per cent. watery sol of gelatin (200 c.c. three times daily) may be advantageous in typhoid fever. (*Nothnagel's Encyclopedia of Practical Medicine, Disease of Blood, page 173.*)

According to Kemp, the ingestion of 7.5 per cent of the total heat requirement of the organism in the form of gelatin spares twenty-three per cent of the body's proteid. There is a total of 2,800 calories required by a man of 154 pounds weight (Chittenden); 210 calories in gelatin are necessary (one gram of gelatin contains 4.1 calories), so about fifty

grams of gelatin, or about 1·5 ounce, are necessary. This amount in one quart of water gives a 5 per cent. solution, and can be flavored with lemon, vanilla, orange or sherry, and sweetened with sugar of milk, and be given in divided doses during the day—between other feedings. Gelatin lessens the tendency to hemorrhage. If venous thrombosis occurs, gelatin should be stopped.

Hypodermically :—

1. Morphin hydrochlor gr. $\frac{1}{4}$, repeat if necessary. Object being to stop the peristalsis of the intestine.
2. Osler recommends large doses of calcium chloride (2 grams every three hours) and also the subcutaneous injection of a 2 per cent. solution of gelatine in order to increase the coagulability of the blood, to favour thrombosis. The writer has used the former.

Locally :—

1. Ice poultice or ice-bag over abdomen.

N.B.—It is depressing if kept on long after the hæmorrhage has ceased and it freezes the abdominal wall into a leathery consistence, and probably interferes with the vitality of the subjacent intestine.

Serum treatment.—

A so-called antitoxic serum has been used in Paris by Chantemesse. This is as yet in a more or less experimental stage.

(*A system of Medicine by Osler and Mc.Crae, vol. II, p. 218.*)

Treat the patient symptomatically.

A. Diarrhœa.

Don't check diarrhœa by powerful astringents ; if stool threatens to be copious prescribe the following :—

R

Bismuth naphtholate	gr. iiss
Bismuth subgallate	gr. v
Tannigen	gr. v
Pulv. cretæ aromatic	gr. x

mft. for a pulv. sig. one every 4 hours up to 3 powders.

2. Enema of starch with opium has been recommended.

B. Constipation.

1. Castor oil emulsion early in morning acts nicely.

2 R

Magnesium Salicylas	gr. xx
Spirit Chloroformi	m. x
Aq Chloroformi	ad. ʒi

mft. for a dose: sig. one twice a day: morning and evening.

3. Enema of a drachm of condy's fluid to two pints of tepid distilled water is an important adjuvant to overcome constipation.

C. Insomnia.

In a long continued fever like enteric it is not advisable to treat the patient for each minor complaints like want of sleep, headache, &c ; if sleeplessness threatens to be troublesome use any of the following :—

1. Chloralamid gr.x—xv. at bed time.
2. Bromural gr v—x. at bed time.

3. R

Sulphonal	
Trional	aa gr. x

mft. for a pulv. to be dissolved in a cup of warm broth two hours before expected sleep.

4. Eichhorst recommends lactophenin on account of its action upon the nervous system, particularly its sedative influence upon excited, sleepless patients.

DOSE—0·5 to 1 gram.

(*Nothnagel's Encyclopedia of Practical Medicine, Typhoid number, p. 463.*)

D Cystitis.

Urotropin gr. v in half a glass of distilled water once a day.

E. Bed-sore.

Prevention is better than cure ; an experienced physician will be on the alert to prevent bed-sores by rubbing the bony protuberance of buttocks with any of the following :—

a. Saline Solution.

b. Rectified Spirit.

Afterwards the part to be dusted freely with the following powder ;—

R

Acid Boric

Zinc. Oxide

Violet powder

“Buttock rest” is essential, as the vitality of the part is much interfered with constant friction on the bed : circular air cushion or cotton cushion with a hole in the centre, is to be inserted underneath the buttocks in order to give physiological rest to the parts.

If bed-sores appear, treat the ulcers antiseptically.

F. Tender toe.

Paint with the following :—

R

Alcohol

Tinc. Iodine

āā 3 ii

If this fails to cure the malady, rub the part with oil of wintergreen.

G. Peritonitis (with or without perforation.)

If there be signs and symptoms of perforation.

- i. Operation affords a better chance of recovery than that offered by Nature.
- ii. Hypodermic injection of Nucleinate of sodium. (40 c.c. of normal saline and 40 c.g. of Nucleinate of sodium) in one or two places of flanks or outer surface of thigh ; it increases hyper-leucocytosis ; it causes pain which is relieved by application of opium fomentation : it should be given at once.

H. Cardiac failure.

Changes in the myocardium resulting from pyrexia and from toxins are the recognised causes of heart-failure in typhoid.

The following are the best combinations :—

1. *Orally* :

- i. Tabloid Digitalin et Strychnine sulph. (1/100 grain each) ; one every 2 or 3 hours.
- ii. Diffusible stimulant.

R

Spt. ammon. aromatic m. xx

Spt. Etheris m. xv

Tinc. Musk m. xx

Aq. Chloroformi ad. 3 j

mft. for a dose : sig. one every 3 hours.

iii. Caffeine citras effervescence. (Bishop's). Dose a teaspoonful in an ounce of water every 3 hours up to 4 doses.

2. *Hypodermically* :—

- i. Tabloid hypod-digitaline and strychnine (1/100 gr. each) every 4 hours up to 2 or 3 injections.
- ii. Ziemmsen recommends sub-cutaneous injection of camphor dissolved in olive oil (camphor 1 gramme, olive oil 5 grammes).

(iii) **Stage of Convalescence** :—

The following is my favourite prescription : Drachm doses of glycerine acid. pepsin. with iron in the shape of iron somatose, Homell's hæmatogen, vin de hæmoglobin, &c., twice a day after meal.

Subsequently the ideal tonic is :

R

Quinine hydroch	gr. ii
Acid nitro-muriatic dil	m. v
Tinc. nucis. vomicæ	m. iv
Tinc. carminative	m. x
Aq. Chloroformi	ad. ʒi

mft. for a dose : sig. one thrice a day after meal.

- NB* —1. Remember that no solid should be allowed for a fortnight even after the subsidence of fever.
2. Remember that temperature should still be taken for a fortnight.
 3. Remember that patient should be kept in bed for some days.
 4. Remember that stimulants should be at once reduced.
 5. Remember that change of air aids convalescence.
 6. Remember that emotional disturbance is the cause of a recrudescence of the fever.
 7. Remember that tuberculosis is a dangerous complication during the stage of convalescence.
-

Dietetic treatment of typhoid.

A cardinal rule in typhoid is to treat the patient and not the disease. It is a mistake to pay too much attention to the temperature, but the appetite requires to be intelligently studied.

Logically, we should aim at limiting to the utmost degree the possibility of taking in any further infection of any kind, so we must see to it that :—

- (i) The food is free from all possibility of contamination and the drinking water absolutely pure
- (ii) The amount and character of food should be limited as it would likely put a strain on the already weakened digestive power, or which through imperfect or perverted digestion would furnish material for fermentation or perversion of metabolism, which in turn, would generate other toxins to be absorbed and still further, to poison the already weakened body.
- (iii) The diet should give enough calorics to make good the amount 'burnt up' in the production of the fever, and so prevent drawing on the tissues of the body itself and causing undue emaciation.

Stage of development.

1. Sanatogen and milk.
2. Benger's food and milk.
3. Plasmon and milk.
4. Plasmon arrowroot and milk (if diarrhoea)
5. Isingglass one ounce, cream half pint, milk 1 pint flavoured with lemon. Dose *ad libitum*.
6. White of two eggs, brandy one ounce, little salt, a little lemon or orange juice, water one pint. Dose :—ad

- 7 Fresh made jug-soup.
- 8 Freshly made chicken broth; it may be thickend with isinglass or arrowroot
- 9 Milk peptonised with Fairchild's peptonising powder; you may add a tabloid of sodium citras gr ii to two ounces of milk; it forms in the stomach a light flocculent, finely divided curd which is easily digested

N B—Scibert recommends milk free liquid diet in enteric. An advantage claimed for the diet is the elemination of fermentation of undigested milk.

- 10 Milk and saccharated solution of lime. (one-eighth volume)
- 11 Equal parts of white wine, whey and egg water (*i.e.*, whites of two eggs beaten to a foam and mixed with a pint of cold water and stained)
- 12 Palatable peptone (Parke Davis and Co.)
- 13 Panopepton with pineapple juice
- 14 Freshly made raw meat juices
- 15 Fruit juices, *e.g.* grapes, pomegranates.
- 16 Freshly made whey, fermented milk Dr Paul Merel (*Lancet* June 4th, 1909) remarks —“Typhoid bacillus like its companion the *bacillus coli communis* is unfavourably influenced by lactic bacilli.”
- 17 Soup of French bean etc., salted and flavoured is recommended

Boas in *Diseases of Intestine* remarks “carbohydrates are more completely digested and utilized than any other variety of nutritive substances.”

N. B.—1. Don't forget this watchward that the patient who before the onset of disease was stout and strong should after the decline of fever come out of bed full of strength and vigour, *i.e.*, you should feed the patient judiciously.

2. Don't give solids in any shape during the whole course of the disease.
3. Don't give tinned food like essence of chicken, &c., when fresh chicken soups are available.

Stage of convalescence :—

Continue the same diet ; you may add :—

1. Calf's foot jelly. Europeans relish it to their hearts content.
2. Squeezed "Chura mund" or "Khoe mund;" add warm milk to make it a thin pultaceous semi-liquid mass, little honey and rose-water palatable to taste.
3. Squeezed "Sago maund," add a few drops of lemon or orange juice for flavour.

Enteric diet as issued at the Massachusettes General Hospital, Boston by E.G. Cutler, M.D.

7. A.M.—Skimmed milk 8 ounces.
9. A.M.—Mellin's food 8 ounces.
11. A.M.—Skimmed milk 8 ounces.
1. P.M.—Eggs and milk 8 ounces
3. P.M.—Beef Juice 3 ounces with Barley water 3 ounces.
5. P.M.—Skimmed milk 6 ounces with tea half an ounce.
7. P.M.—Chicken broth 4 ounces with barley water 3 ounces.
9. P.M.—Butter milk 8 ounces.
11. P.M.—Skimmed milk 8 ounces.
1. A.M.—Beef tea 8 ounces.
3. A.M.—Skimmed milk 8 ounces.
5. A.M.—Albumen water 8 ounces.

The following is the writer's ideal menu of diet.

7. A.M.—Peptonised milk 8 ounces.
- 9 A.M.—Mellin's food 6 ounces or fermented milk 4 ounces.
11. A.M.—Chicken broth 4 ounces, or Jug Soup 2 ounces.
Barley water 2 ounces, Fruit Juices.
1. P.M.—White of an egg and milk 4 ounces, or Panopepton with whey, or pineapple juice.
- N. B.*—Put into a small teacup 1 or 2 teaspoonful of clean crushed ice; add one tablespoonful of Panopepton; stir, then fill the cup with whey; drink slowly. This is very refreshing and nourishing
3. P.M.—Peptonised milk 6 ounces.
5. P.M.—Fermented milk 4 ounces.
7. P.M.—Panopepton or Palatable peptone a tablespoonful in water.
9. P.M.—Peptonised milk 8 ounces.
- 1-2 A.M.—Albumen water 6 ounces.
5. A.M.—Panopepton or Palatable peptone a tablespoonful in water.

Widal's reaction or agglutination test.—

Immune Serum agglutinates bacteria.

The method is as follows—

1. Put in a tube 1 vol. of typhoid emulsion and 1 vol. of normal salt solution.

2. Make a series of dilutions of the serum of patient in normal salt solution by a graduated pipette.

1	vol.	of	serum	+	4	vol.	: salt sol	:= 1 in 5	dilution
1	"	$\frac{1}{5}$	"	+	1	"	"	= 1 in 10	"
1	"	$\frac{1}{5}$	"	+	4	"	"	= 1 in 25	"
1	"	$\frac{1}{5}$	"	+	1	"	"	= 1 in 50	"
1	"	$\frac{1}{50}$	"	+	1	"	"	= 1 in 100	"
1	"	$\frac{1}{100}$	"	+	1	"	"	= 1 in 1,000	"

Mix. each dilution, and blow out into separate watch-glasses, label these, and cover with other watch-glasses.

3. Mix. 1 vol. of diluted serum with 1 vol. of typhoid bacilli emulsion (this doubles the total dilution of each serum.)

Allow it to stand for 4 hours and recognise agglutinations.

Clinical notes.

Some fevers closely resemble typhoid in their clinical features *vis* :—

- i Paratyphoid.
- ii Pseudotyphoid.
- iii Typho-Malarial.

1 Paratyphoid Fever.

Paratyphoid fever may simulate typhoid fever in almost every particular—mode of invasion, temperature curve, duration, relapses, eruption, enlarged spleen, diazo-reaction, absence of leucocytosis, diarrhoea and hæmorrhage from the bowel ; but is not caused by *Bacillus typhosus*. It is due to paratyphoid bacillus belonging to the so-called "Gartner" group. The name "paratyphoid" bacillus appears first to have been used by Archard and Bensaude in 1896, was reintroduced by Schottmuller in 1901, and was revived by R. T. Hewlett in the Practitioner, page 173, 1904.

It may occur in epidemics, may be spread by drinking-water, affects young adults and is most prevalent in the autumn. In mild typhoid fever the agglutination-reaction is markedly present, while in paratyphoid fever the above reaction is absent and is usually mild in its course.

II. Pseudotyphoid Fever.

Pseudotyphoid Fever is an acute infectious disease of unknown origin and unknown pathology. It is characterized by a short incubation period of four or five days, then a period of continuous fever accompanied by an intense headache, more or less apathy and prostration, a profuse and extensive maculopapular eruption, all of about two weeks' duration: then the temperature would abruptly fall either by crisis in a few hours, or by a rapid lysis within two days, and the symptoms then would all disappear.

Dr. Nathan E. Brill insisted that this disease was a distinct clinical entity and was entitled to a definite place in medical nosology. It had absolutely no relationship to typhoid fever, from which it was distinguished in every clinical feature, particularly in the temperature curve, in the eruption, the absence of the Widal reaction, and the lack of evidence from blood cultures. The disease was apparently not communicable. (*Medical Record*. March 5, 1910.)

III Typho-Malarial Fever.

The clinical feature of this disease is like that of typhoid and is common in India.

Typhoid, as a complication, is of course due to the *Bacillus typhosus* occurring in a person who is also infected by a malarial parasite, and in that sense, therefore, the old term 'typho-malaria' is correct. (*Manual of Tropical medicine by Castellani and Chalmers*, 1910, page 669).

Treatment is practically the same as that of typhoid, 2

RHEUMATISM.

Rheumatism is an infectious disease due to a special microorganism, the *diplococcus rheumaticus*. The tonsils are the chief portals for the entrance of the poison of rheumatic fever. The toxic condition of blood causes fever, erratic painful swellings of the larger joints, drenching sweats, leucocytosis and liability to cardiac affections *e.g.* endocarditis, pericarditis, &c.

Garrod remarks :—

“ We still remain almost entirely ignorant of the nature of the morbid process concerned in its production.”

A recent and very plausible theory ascribes rheumatism to toxins formed in the alimentary canal as the result of disordered digestive functions, producing disturbances in metabolism and alteration in the tissues. The body suffering from these effects of auto-intoxication has its vital resistance lowered and is therefore subject to microbic invasion.

In most cases treatment brings down pain and fever within a week, but it must be continued for at least another week, else the symptoms will relapse and the pain return.

For practical treatment it is divided into :—

- (i) Acute rheumatism.
- (ii) Chronic rheumatism.

(I) Acute Rheumatism.

A. Medicinal.

Internally :—

- Open the bowels by Mag sulph ʒii—iv. early in the morning. Salicylic acid and its derivatives have a specific action in rheumatism, as mercury in syphilis or quinine in malaria.

It is unanimously agreed that, under alkaline treatment, cardiac complications are less common, hence the combination of the salicylates with the alkali is satisfactory.

The following combinations answer our purpose well.

1. R

Sodii salicylas gr.vii.

(Natural).

Pot. Bicarb	gr. x.
Tinc Hyoscyamus	m. xx.
Spt Ammon aromatic	m. xx
Syr. Acacia	3 i.
Aq Chloroformi	ad. 3 i.

mft. for a dose : sig. one thrice a day.

Meara (*in the American Journal of the Medical sciences for March 1910*) advises the use of sodii salicylas that has stood best the test of time and experience. Be sure that the drug is chemically pure.

2. Treatment by aspirin.

Adult.	{	75 Grains in 24 hours for first 2 days.
		60 " " " from 3rd to 6th day.
		45 " " " from 7th to 9th day.
		30 " " " from 10th to 12th day.
Child of 5 years.	{	10 Grains in 24 hours for 2 days
		8 " " " from 3rd to 6th day
		6 " " " from 7th to 9th day.
		4 " " " from 10th to 12th day.

N. B.—Each individual case demands treatment according to its nature.

The best media for its administration are :—

(a) Cold milk.

(b) Fresh lemon juice.

(c) Huxley's menthol and winter-green cream, it is sold in collapsible tubes and is a boon to travellers.

(d) R̄

Acid salicylic	ʒi
Oil Terebinth	ʒi.
Lanolin	ʒi

mft. apply with friction for five minutes. Wrap the limb in cotton, and repeat the treatment daily.

3. Apply the following :—

R̄

Mesotan	
Oil olivæ	āāʒi.

mft. it should be applied by a pencil of cotton cautiously.

N. B.(a)—Don't wrap up the part instantly otherwise blisters may arise

(b) Don't use the medicine if the skin be tender or there be eczema as the writer has the bitter experience of observing nasty blebs which terminated into big ulcers after its application.

4. Blister:—The writer is strongly against it as the vitality of the part has already been much impaired and blister may add fuel to fire and lead to ulceration

5. Application of cold compress or ice bag over swollen joint is now obsolete.

N. B.—Warm fomentation over joints though largely practised to alleviate pain is contraindicated as it leads to synovial effusion.

Hypodermically :—

Injection of solution of sodium salicylate into the joint had been advocated by Santini (*B. M. J. October 22nd 1904*)

Sodium salicylate coming in contact with nascent Co_2 generated at the seat of inflammation, is split up into salicylic acid where it exerts its specific action. In whatever form salicylic acid is taken, it is converted into sodium salicylate in the blood and circulates as such. The carbonic acid and phosphoric acid of the blood are constantly struggling for the possession of sodium and at the seat of inflammation, Co_2 unites with sodium setting salicylic acid free to do its action.

Treat the patient symptomatically.

1. Hyper-pyrexia :—

(a) Ice over head.

(b) Graduated bath may be administered, but it is difficult to carry out in private practice.

(c) Cold sponging.

N.B.—To bring down temperature by a powerful antipyretic like phenacetin is dangerous.

2. Cardiac complication, &c.

Locally :—

Small blister in the neighbourhood of heart.

Internally :—

Iodides dissolved in milk to remove inflammatory products.

3. Sleeplessness.

Chloralamid gr. x. At night.

4. "Cerebral rheumatism" with hyperpyrexia requires prompt treatment with the cold bath.

During the stage of convalescence give quinine salicylate gr. v. early in the morning ; arsenic and nux vomica are best tonics ; iron is recommended if there be rapid anæmia.

The following combinations serve our purposes :—

R.

Ferratin	gr. ii.
Sodii-arsenias	gr. $\frac{1}{4}$.
Ext. Nux vomica	gr. $\frac{1}{4}$.
Ext. Gentian	qs.

mft. for a pill, sig one twice a day after meal. If there be some cardiac complication, the writer recommends the following :—

R.

Sodii salicylas	gr ii ss
Syr ferri Iodide	3 ss.
Sodii Iodide	gr iii.
Aqua Dist	ad 3 i.

mft. for a dose : sig one thrice a day after meal

B. Hygienic Treatment.

1. Absolute rest in bed
2. Avoid exposure.
3. Wear flannel next to skin.
4. Keep the patient in a dry two-storied room.

C. Dietetic treatment :—

Milk and nothing but milk.

Horlick's malted milk when there is difficulty of procuring fresh milk specially at night.

(II) Chronic Rheumatism.

Internally :—

1. The prescription of "Chelsea Pensioner."

(Louisville Medical Monthly)

Lord Anson paid three hundred pounds for the privilege of publishing the following combination for chronic rheumatic arthritis.

R̄

Sulphur	℥ ii.
Cream of tartar	℥ i.
Rhubarb	℥ ii.
Guaiaacum powder	℥ i.
Make one powder and add honey ℥ xvi.	
Add also a finely powdered nutmeg	

Mix well, and take two teaspoonfuls in a tumbler of white wine and hot water on going to bed, and repeat the dose on getting up in the morning.

2 The combination of iodide, guaiacum and sarsa is recommended.

R̄

Pot Iodide	gr. vi.
Tinc guaiacum ammoniata	m. xv.
Tinc Quillæ	℥ ss.
Ext. sarsa liq.	℥ i.
Aq. Chloroformi	ad ℥ i.

mft. for a dose : sig. one thrice a day an hour after meal.

N B —Salicylates are useless.

Locally :—

Bier's Hyperemia Treatment.

1. Hot air bath is very efficacious. Bloodgood, in his article in "*Progressive Medicine*" for Dec. 1906, says : Bier bases his hyperemic treatment on the fact that the exudate in an inflammatory process is nature's means of combating local infection. The advantageous use of hot dry air requires that it shall reach a temperature of from 200° to 400° Fahrenheit. Such a temperature contracts the arteriols ;

this action being followed in a very few minutes by dilatation and an agreeable flush. It relieves pain and muscular spasm, stimulates the cutaneous nerves and the lymphatics and gives a glorious sense of well-being. Betz hot-air apparatus while inexpensive, will be found admirably adapted to the purpose for which it is intended.

Dry heat in the form of the radiant heat baths has been strongly recommended and is a valuable stimulant

(*A system of Medicine by Osler and McCrae, Vol. II page 711*).

2. Massage and passive movements to reduce swelling and prevent anchylosis.

3. Electricity.

4. Seabaths : Tidman's sea salt—a handful in a cistern of tepid water for bath, serves our purpose.

5. The aromatic sulphur bath produced by the solution of Pintinol is at once pain-soothing and beneficially influencing the attack. Pintinol (*Syn-Thiopinol*) contains :

65	per cent	alcohol
18	„	„ pine oil.
14	„	„ sulphur.
3	„	„ glycerine

and shall be kept from the proximity of a naked flame. The bath should be given thrice a week.

6. Rub the affected joints well with the following :—

R

Juice extracted from the root “Sajena ”

Pure Mustard oil	℥ ii
Rec. spirit	℥ ii.

This indigenous Medicine requires further trial in the hands of the profession to prove it as an infallible remedy in chronic rheumatism.

Climatic change is highly beneficial.

Dietetic treatment :—

If the bowels are thoroughly attended to, many cases require no dietetic treatment. In many cases the patient is aware that certain articles of diet affect rheumatism unfavourably, and the use of such foods or drinks should be avoided or restricted. Nature is the best guide in these matters.

The following are suggested :—

- (i) The diet should be a simple one.
- (ii) More fluid should be taken.
- (iii) Restrict the carbohydrates, *e.g.* sweets of all kinds, potatoes and other underground roots and all puddings of a “stodgy” nature.

(Green's Encyclopedia and Dictionary of Medicine and Surgery, Vol. viii, p. 581).

MALARIA.

Malaria literally means bad air.

Malaria is a specific infectious disease caused by the hæmatozoa of Laveran, *characterised generally by—*

1. Periodicity
2. Local occurrence and miasmatic changes.
3. Susceptibility to quinine.
4. Certain appearance of plasmodium in the blood.
5. Enlargement of spleen.
6. Pigmentation of tissues ;

and

characterised clinically by various types of fever, viz :—

- I. Intermittent.
- II. Remittent.
- III. Pernicious.
- IV. Larval or masked form.
- V. Malarial cachexia and anæmia.

1. Intermittent fever :—

- (A) Attack of fever.
- (B) Apyrexial interval.

A. Attack of fever.

(i) *Prodromata.*

(a) Objective symptom.

Temperature always rises before ague actually begins.

(b) Subjective symptoms.

1. Head-ache.
2. Feeling of lassitude.
3. Heaviness of limbs.
4. Nausea and vomiting.
5. In children even convulsion.

(iz) Ague.

Classical symptoms are :—

Patient shivers, teeth chatters, hands feel cold, nose and ears get blue, tongue is foul and dry, pharynx is dry therefore he can not speak, pulse is weak and rapid.

(iii) Hot stage.

Classical symptoms are .—

Skin is dry and pungent, face gets flushed, conjunctiva is red and congested, pulse is rapid and is bounding, some confusion of mind may be present, patient is restless, temperature continues high.

(iv) Sweating Stage.

Classical symptoms are :—

Sweat begins to form on the face, neck and then spreads to the whole body, pulse rate falls down, respiration gets slow and the patient falls into a deep sleep and wakes up usually in health, sometimes little exhausted.

II. Remittent fever.**III. Pernicious malarial fever.**

(a) Black-water fever.

*(b) Malignant malarial fever with hæmorrhage ;
e.g., hæmatemesis, melina, hæmaturia, &c.*

(c) Cerebral type ; resembling sunstroke.

(d) Algid type , resembling cholera.

IV. Larval or latent malaria.

V. Malarial cachexia.

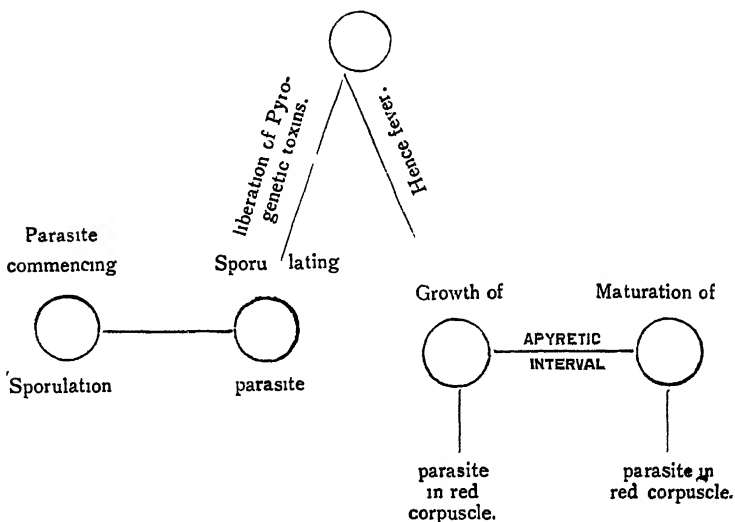
It is a sequela to chronic malaria.

It is now an established fact that malarial fever like all other parasitic diseases is a "catching disease," that it is communicable from the sick to the healthy by the agency of mosquitoes of particular species—*Anopheles Maculipennis*.

The cycle of life of the parasite.

The malarial parasite exists in nature outside the human body in *Anopheles Maculipennis*, passes from the salivary glands down the hypopharyngeal canal of the mosquito's proboscis, is inoculated into the human body by the bite, penetrates into the red blood cells and completes a cycle in the blood of the human being who is acting as host. This cycle is called the *cycle of Golgi*.

The life-history of the malarial parasite has a definite relationship to the disease as can be seen by studying the diagram—



N.B.—Sometimes two distinct broods may exist, producing double fever, or three distinct broods, causing triple fevers.

Normally an antitoxin is readily formed by the cells of the body to neutralize this hæmolytic toxin, and may be a cause of the natural disappearance of the parasite and the cure of the disease, provided the vitality is at par ; starvation lessens the vitality, while nuclein, etc, raises it up.

Its results—

1. Pigmentation of organs is due to hæmozoin liberated by the infected red corpuscles.
2. Hæmoglobinuria is due to the excessive destruction of blood, as the liver is unable to convert the whole of the hæmoglobin liberated into bile.
3. Anæmia is a marked feature due to destruction of red cells
4. Spleen and bone-marrow are affected ; they act as a purifier to the blood which passes through them.
5. Death in certain pernicious cases is due to liberated spores of the parasite attacking new erythrocytes, and so the numbers of the parasites increase.

Fate of parasite ;—

1. It may be killed and hence no infection results.
2. It may remain dormant and go through its life-cycle in the spleen, and not develop until predisposing causes, by lowering the vitality, give it opportunity when the parasite so to speak springs to life.
3. It may develop at once and give rise to fever.

Varieties of Parasite.

The parasites of malaria are divided according to the periodicity of fever, *viz.* quotidian or aestivo-autumnal, tertian and quartan.

The aestivo-autumnal parasite develops in the blood in 24 to 48 hours ; the tertian does in 48 hours while the quartan in 72 hours.

Dr. Manson (*British Medical Journal December 8th, 1894*) concludes that the mosquito is the agent which removes the malarial parasite from the human body and gives it the opportunity of continuing its existence as a species. He considers that malaria is very probably a disease of insects, the malarial organism being a gregariniform parasite capable of living in the body of man or in the body of mosquito—the hosts being interchangeable so to speak.

Dr. Ronald Ross and Dr. Leonard Rogers trace the “crescent body” into the stomach of mosquito where it rapidly passes through the ovoid, spherical, and flagellate stages.

“Crescents possess no amoeboid motion, yet show the power of gradually changing their shapes”—Mannaberg.

Hence the ideal plan of treatment will be to destroy mosquitoes and to treat the patient till he is radically free of malarial parasite.

The treatment is grouped under two broad divisions,—

(i) Prophylactic.

(ii) Therapeutic.

(1) Prophylactic treatment of malaria.

1. General—

(a) the land should be elevated and well drained.

(b) Dwelling should be well raised and of impervious material to prevent all refuse water to get underneath the house.

(c) Jungle should be made clear as much as possible,

(d) Drinking water must be pure ; it is safer to boil water before drinking.

(e) Eucalyptus pine, and sun-flower trees are very useful probably through the influence in draining the soil.

Professor Celli on the other hand says that such trees, so far from banishing mosquitoes, are favourite hiding-places for these insects.

2 Personal—

(a) Avoid chill, night-air and exposure to sun.

(b) Wear cotton next to the skin and flannel or woolen dressing outside.

(c) Large fires have an important prophylactic influence.

(d) Use of 'sola' hat or umbrella is good.

(e) Don't sleep on the ground.

(f) Isolate the patient from endemic locality or segregate him in a specially made "mosquito-proof house" with brass and nickel wire gauge.

(g) Exposure to sun light increases the resisting power of the system by the tonic effects of light on the red blood corpuscles.

(h) Calcium sulphide has been employed as a remedy for various infectious maladies.

It can be employed thus :—

1 R

Calcium sulphide gr. $\frac{1}{8}$ — $\frac{1}{2}$

mft. every half hour till 5 grains have been given in a day.

2 R

Calcium sulphide 6 centigrams.

Arsenic sulphide 1 milligram.

mft. for a pulv. sig. to be given an hour before each meal and a double dose at bed time, until the skin smells of sulphureted hydrogen, then half the doses to keep up the saturation,

No mosquito will attack any person so saturated.

3. *Use of drugs :—*

Koch's Method.—Koch's method consists of what is known as the "long interval prophylaxis," by the giving of 15 to 22½ grains on two consecutive days at intervals of, from 8 to 11 days, usually on the 10th and 11th days.

Celli's Method.—Celli's method consists in the daily administration of two sugar-coated tabloids of three grains each of the bisulphate or hydrochloride of quinine.

Plehn's Method.—Plehn's method of "double prophylaxis" consists of giving 7 to 8 grains every 4th or 5th and 6th day.

Indian Method.—A large number of medical officers in India now give a medium-sized dose (10 grains) twice a week on two consecutive days

(*Prophylaxis of Malaria in India by P. Hahir, 1910, page 163*).

The writer's method.—Two grains of Quinine hydrochlorate dissolved in two drachms of Vini Gallici are to be taken at bed time. Drop dose of liq Arsenicalis is good

Fumes of sulphur or scented resin especially at dusk is an excellent plan of driving away the mosquitoes and of perfuming the air.

4. *Protection against mosquito.*

(a) by drainage of pools where *Anopheles Maculipennis* may harbour.

(b) extermination of mosquitoes by—

1. Kerosine oil or fishes &c., in stagnant water, *e.g.*, pools; ponds, &c.
2. Fumes of sulphur or scented resin.

(c) Mosquito net.

(d) "Mosquito-proof house" with brass and nickel wire gauge

(e) Drugs applied to the skin :—

Sponge the body well with the following—

R

Quinine Hydrochlorate	gr ii
Glycerine	oz. ii
Aq Rosæ	oz vi

mft. sponge before retiring to bed.

5 *Use of serum of immune animal is beneficial.*

(II) Therapeutic treatment

A. *Open the bowels.* :—

(1) By a big dose of calomel followed by saline purgative in the morning :

R

Hydrarg Subchloride	gr v
Sodii Bicarb	gr xv

mft. for a pulv : sig. at bed time.

Early in the morning a dessert-spoonful of Kutnow's powder or Granular Sodii Phosph effervescence is dissolved in a glass of hot water and is to be sipped like tea.

Hare, in giving the treatment for malarial fever, after extolling quinine, says "But, on the other hand, it must not be forgotten that the quinine cannot destroy the malarial parasite until it (the quinine) has entered the blood ; that it cannot enter the blood until it is absorbed, and that it is impossible for it to be absorbed if the gastroduodenal and hepatic circulation is so disturbed that catarrh of the stomach and bowels is present, making it impossible for the quinine to be taken

up by the circulation ; it is therefore essential, in almost every case of intermittent fever, that the bowels shall be thoroughly unloaded." In other words, lay the foundation for your treatment by first "cleaning up and cleaning out" the intestinal tract

(2) By fractional doses of calomel (*Hare's method*)

R

Hydrarg subchloride	gr. $\frac{1}{8}$
Resin podophyllin	gr. $\frac{1}{8}$
Sodii Bicarb	gr. iii

mft. for a pulv · sig. one every half hour for six doses, followed by a full dose of a laxative saline.

B. Disinfect the intestine by antiseptics :—

Sulphocarbolates of calcium, sodium or zinc answer the purpose.

Waugh (*American Journal of clinical Medicine Jan 1910*) remarks that a large share of the "Malarial" symptoms is due to fecal toxemia

Is there anything quite as likely to lessen the resisting power of blood corpuscles as a fecal element in the blood serum surrounding them ? Or anything so apt to render this serum a favourable culture-fluid for the plasmodia ?

Arsenic has the power of rendering the blood corpuscles so unpleasant to the Malarial plasmodia that the latter leave these cells alone

Treat the patient :—

1. During fever.
- 2 During remission.
3. During subsequent apyretic period.

1. Treatment during fever :

1. *Ague stage* :—

When the chill occurs with the onset of the paroxysms, the patient should go to bed and be warmly covered.

15 drops of spt. chloroform with hot lemonade is refreshing.

Hot water bottles may be placed to the feet. Physiologically, the proper remedy to give is the powerful antispasmodic combination of.

R

Glonoïn	
Hyoscyamine	$\overline{aa} \frac{1}{4}$ milligram
Strychnine Arseniate	$\frac{1}{2}$ milligram

mft. for a pulv : every ten minutes until the cutaneous capillaries are forcibly dilated and the internal hyperæmia abated.

2. *Hot stage*.

(a) Fresh lemonade, soda water with milk, and fruit ice-waters are very refreshing.

(b) Ordinary, Ammonia mixture.

(c) Writer's formula.

R

Acid Carbolic	m. $\frac{1}{2}$
Acid Hydrobromic (dil)	m. xv.
Syr. Aurantii	3 i
Aq. Chloroformi	Ad. $\frac{3}{4}$ i

mft. for a dose : sig. one every 3 hours.

Or,

The following combination acts nicely.

R

Oil Eucalyptus	m. $\frac{1}{2}$
Pot Bicarb	gr. v
Sac. Lactus	$3\frac{1}{2}$
Spt. Chloroform	m. x.
Aq. Camphor	ad. $\frac{3}{4}$ i

mft for a dose : sig. one every 3 hours.

(d) Warburg's Tincture 30 drops every hour till temperature lowers down to normal.

(e) Liq. Cinchon Hydrobromatis m. v — x, in an ounce of Aqua Auranti floris every 3 hours.

(f) A little stimulation of the auricular branch of the pneumogastric by applying a cool lotion to the lobule and behind the ear is most refreshing to the patient

2. Treatment during remission :—

Dr. John Stuart remarks :—"It is the fundamental principle that quinine should not be given unless the skin is moist, the tongue moist and the secretions are open. If the skin is dry, the tongue parched and the bowels are locked up and loaded, quinine will intensify the evil".

(A) Quinine is our sheet-anchor, it is quinine and nothing but quinine can kill the plasmodium quicker.

In the Malarial Number of the Practitioner March 1901. *Patrick Manson, M. D., remarks :—*"it may be safely asserted that any intermittent fever which resists quinine for 3 or 4 days is not malarial."

Marchiafava and Bignami, from their careful study of the subject, conclude as follows :—

"Quinine acts upon the malarial parasites in that phase of their life-cycle in which they are nourished and developed."

Prof. Osler boldly remarks :—

“The physician who at this day cannot treat malarial fever successfully with quinine, should abandon the practice of medicine.”

(*A system of medicine by Osler and McCrae, Vol I, page 448*).

The best time of quinine administration :—

Theoretically the best time of the administration of quinine is during sporulation of the parasites, when the youngest forms will be free in the blood stream, while *clinically* there is some ground for giving the drug during a remission or intermission, as it is less likely to produce sickness or distress at that time.

(*Fevers in the Tropics by Leonard Rogers, page 231*)

Mode of administration of Quinine :—

1 *Orally* :—

- (a) Quinine in solution with some acid.
- (b) Quinine in suspension : powder quinine in milk, tea or mucilage.
- (c) Quinine in cachet.
- (d) Quinine in pill.
- (e) Quinine in tabloid or tablet or capsule form.
- (f) Quinine pulverette, (*Oppenheimer Son & Co*).

The ‘Lancet,’ December 14, 1907. (Laboratory Report.)

The ‘Pulverette’ may be regarded as a real advance on the ordinary pill. In appearance it resembles the pill but consists of a thin shell which contains the medicament in the

form of powder. On merely pressing the 'Pulverette' between the thumb and finger it cracks and the powder is released.

N. B.—Quinine acid Hydrochlorate gr. v. tablet or pulverette is highly recommended by the writer, while quinine in pill form is condemned as he had observed undissolved pills in the stool on several occasions.

2. *Hypodermically :*

Tabloid Hypod. Quinine bihydrochloride, gr. iii when required.

In Pernicious form, give quinine quickly without waiting for the action of cathartics. Death camps on the patient's trail, and only the speediest aid will fend off the stroke.

3. *Inunction :—*

Rub quinine ointment on child's back

4. *Per rectum :—*

(a) Enule quinine bisulphatis gr. v

(b) Quinine hydrochloride gr. x. dissolved in bovril gruel act as nutrient enema.

N. B.—Rectal administration is of great value when there is gastritis.

Method of disguising the taste of quinine :—

1. Chew a bit of myrabolium before taking quinine.
2. Gingerine covers the taste of quinine.

R.

Quinine Hydrochloride	gr. v
Piperine	gr. iii
Gingerine	gr. $\frac{1}{2}$

mft. for a pulv : sig. one every 3 hours.

3. Sugar coated tabloid masks the taste of bitterness.
4. Quinine in cachet.

Varieties of tasteless quinine :—

1. Quinine tannas.
2. Euquinine.
- 3 Aristochin.

Dose of quinine .—

7 to 10 grains of quinine every 2 hours upto 3 doses after the temperature has fallen down to normal.

American physician recommends arseniate of quinine (one grain of arseniate of quinine=15 grains of sulphate of quinine).

(B.) Other medicines used in this stage of the disease.

1. Dr. Brodax recommends acetanilid in preference to quinine, and has prescribed 2 to 6 grains of the medicine according to the age of the patient 20 minutes or half an hour before the expected chill.
2. Drs. Blanchard and Ribot strongly recommended the use of Phenocoll hydrochloride for fever of malarial origin instead of quinine and antipyretics of coal tar series. At least 30 grains per diem divided into 3 doses should be given 5, 3 and 2 hours respectively before the time of expected attack. The best way of administration is in solution with Syrup Aromaticus.

N. B.—It should be given where it is difficult or impossible to administer quinine

The “darkness” treatment :—

Light stimulates the cutaneous circulation and has a distinctly irritating effect on the red corpuscles of

the blood which carry the germ. In this way the germ is aroused and disseminated. Hence the malarial exacerbation (*Amer. Journ. of clinical med. Jan. 1910*)

3. Treatment during subsequent apyretic period.

J. H. Whelan : *British Med Jour.*, April 23, 1910 remarks that quinine cures malarial fevers by destroying the homes and food of the *Plasmodia malarie* before they can sporulate asexually, but yet the "cured" patient may remain a source of infection to his neighbours for some time.

Internally :—

1. The following combinations of chlorides, bromides, phosphates and sulphates are recommended by the writer :—

(a) R

Quinine Hydrochloride	gr 11
Acid Nitromuriatic (dil)	m v
Liq. Arsenic Hydrochloride	m 11
Liq. Strychnine Hydrochloride	m 11
Tinc. Ferri Perchloride	m. vii
Inf Calumba	ad. ʒ 1

mft. for a dose : sig one twice a day after meal.

N. B —You may omit Nitromuriatic acid if required, hence it would be an *excellent quinine mixture without acid*.

(b) R

Quinine Hydrobromide	gr. ii
Acid Hydrobromic (dil)	m. v
Syr. Aromaticus	ʒ ss
Tinc Carminative	m. x
Aq. Chloroformi	ad ʒ i

mft. for a dose : sig. one twice a day after meal.

N. B.—Syr. Hydrobromate et Strychnine (Fletcher's). Dose a teaspoonful twice a day after meal being diluted with an ounce of water.

(c) R

Quinine Phosph	gr. ii
Ferri Phosph	gr. i
Sodii Phosph	ʒ ss
Strychnine Phosph	gr. $\frac{1}{4}$
Acid Phosphoric (dil)	m. v
Aq. Chloroformi	ad. ʒ i

mft. for a dose : sig. one twice a day after meal

N. B.—Syr. Ferri Phosph. cum Quinine et Strychnine. Dose
a teaspoonful as mentioned above.

(d) R

Mag. Sulph	ʒ i
Quinine Sulph	gr. ii
Acid Nitro-muriatic (dil)	m. v
Ferri Sulph	gr. $\frac{1}{2}$
Tinc. Zingiberis	m. vii
Aq. Chloroformi	ad. ʒ i

mft. for a dose : sig. one twice a day after meal.

2. The following powders are worthy of a trial.

(a) R

Quinine Hydrobromate	gr. ii
Ferratin	gr. ii
Pulv. Rhei	
Pulv. Zinger	
Pulv. Calumba	aa gr. i

mft. for a pulv : sig. one twice a day.

(b) R

Quinine Phosph.	gr. i
Ferri Phosph.	gr. i
Sodii Phosph.	gr. xv
Pulv. Rhei	gr. ii
Leptandrin.	gr. i

mft. for a pulv : sig. one twice a day.

3. American physicians recommend triple arseniates with nuclein three times a day after meals for a month or six weeks.

R

Quinine Arseniate	gr. $\frac{1}{4}$
Ferri Arsenias	gr. $\frac{1}{8}$
Strychnine Arseniate	gr. $\frac{1}{8}$
Ext Gentian	qs.

mft. for a pill : sig. one thrice a day after meal.

N. B.—Plasmodium is destroyed by quinine. Blood is restored by ferri arsenias Vitality is incited by strychnine Nuclein restores the protective powers of the body.

Latent or masked malaria.

Quinine hydroferrocyanide gr. $\frac{1}{10}$ thrice a day.

4. The undermentioned formulæ or pills act nicely.

(a) Malarial fever with rheumatic diathesis.

R

Quinine Salicylas	gr. ii
Lithium Salicylas	gr. ii
Narcotin	gr. i
Ext Gentian	qs.

mft. for a pill : sig. one thrice a day.

(b) Malarial fever with enlarged spleen

There is a very valuable remedy to reduce enlarged spleen.—Berberine ; adult dose one grain per day ; it causes violent contraction of the spleen.

(i) R

Quinine fluoride	gr. ii
Ferri Arsenias	gr. $\frac{1}{8}$
Ext. Nux Vomica	gr. $\frac{1}{4}$
Oil Anisi	m. $\frac{1}{4}$
Berberine	gr. $\frac{1}{4}$
Pil Rhei Co.	gr ii

mft. for a pill : sig. one twice a day.

N. B.—You may add any of the following :—

- (i) Methylene blue gr. i
 or (ii) Ergotin gr. $\frac{1}{2}$ -1.
 or (iii) Narcotin gr. i-iii

N B.—Arsenic and Narcotin act directly on malarial crescent.

(ii) Dr. R.C. Sanders advocates the use of adrenaline. It causes contraction of the spleen.

(c) Malarial fever with nervous temperament.

R

Quinine Hydrobromate	gr ii
Ferri bromide	gr. i
Arsenic bromide	gr $\frac{1}{4}$
Aloin	gr. $\frac{1}{4}$
Pil. Colocynth et Hyoscyamus	gr ii

mft. for a pill sig one twice a day.

(d) In obstinate malarial cases where quinine has failed.

R

Ammon. Picrate	gr. $\frac{1}{4}$
Sodii Bicarb	gr. ii

mft. for a pulv : sig one thrice a day

Locally :—

(a) *R*

Creosote	ʒ ii
Lint Iodine	ʒ vi

mft. paint about a rupee size over enlarged spleen.

(b) Lawrence recommends scarification and pressure

(c) X rays treatment may be tried in obstinate cases under experienced hands.

(d) Vibration over the region of liver is useful

(e) Pope recommends the use of alternate hot and cold douch over an enlarged liver and spleen.

(f) Rub with bin-iodide of mercury ointment followed by local sun-bath

Treat the patient symptomatically :

1. *Vomiting*:—

Prescribe quinine in an effervescent form.

R

Quinine Hydrochlorate	gr. ii
Sodii Bicarb	gr. $\frac{3}{2}$

mft. for a pulv : to be added to the mixture below.

R

Liq. Ammon Citratis	℥ ii
Acid Citric	gr. xv
Syr. Aromatic	℥ ss
Aq. Aurantii Floris	ad ℥ i

mft. for a dose : to be mixed with the powder above.

2. *Thirst*

The following camphoreted diuretic drink is recommended.

R

Nitre	℥ i
Camphor	℥ $\frac{1}{2}$

(rubbed with yolks of 2 or 3 eggs) water 10 quarts.

Mix and drink : *Dose ad libitum*.

3. *Hæmatemesis &c.*:—

(*Vide* my article on cirrhosis of liver.)

4. *Spongy gums*.

Paint the part with styptic collodion.

5. *Constipation*:—

Ziemann strongly recommends washing out the rectum with warm normal saline solution as a routine practice in constipation.

6. *Cancrum Oris* :—

Gargle with Condy's lotion off and on, followed by Hydrogen peroxide spray ; touch sloughing sores with fuming nitric acid or pure carbolic acid : and feed him with nourishing food and stimulants.

7. *Meningitis* :—

(*Vide* my article on Cerebrospinal Meningitis.)

8. *Delirium*.

(1) Delirium without congestion as indicated by normal eye, etc.

R

Nepanthe m. x with little water.

(2) Delirium of the drunkard, who speaks at random during slight fever.

R

Clhoral Hydras.

9. *Nose bleeding* :—

Touch the bleeding point with liq adrenalin chloride (1 in 1000) P. D & Co. ; if this be impracticable plug the posterior nares with cotton.

10. *Bed sore* :—

(*Vide* my article on Typhoid.)

11. *Hæmaturia* :—

Atropine stops the loss of blood.

Dietetic treatment.

During the stage of fever restrict to liquid diet, *e.g.*, milk or milk and soda water, broths. Barley water, sago, oatmeal-water, lemonade and the juices of oranges, grapes and pomegranates may be freely given.

Alcohol is not necessary in all cases, but it should be given when the weakness is marked and the pulse is failing.

During apyretic period bread paps and other light farinaceous foods are allowed.

Black water fever is a pernicious type of malarial fever characterised by great blood destruction and hæmoglobinuria.

The main indications are:—

1. To destroy the parasite by—

(a) oral administration of quinine tannate grs.
iiss often repeated.

(Nocht's Method.)

(b) intramuscular injections of quinine bihydrochloride gr. iiii twice a week.

2. To flush out the kidneys by albumen-water, soda-water, whey, barley water &c.

The following is an extract from the *Annals of Tropical medicine and parasitology*, October 1, 1909, page 172).

In black water fever there is a tendency to plugging of the renal tubules with granular material, which is purely mechanical in its action and appears less likely to occur when the flow of urine is rapid than when it is sluggish. For this reason in all cases of black water fever, and especially when the amount of urine secreted is small, the administration of a copious amount of fluid to drink, tea, caffeine, digitalis or other diuretics are recommended.

3. To keep up the heart's action and the blood pressure by sparteine sulph gr. $\frac{1}{4}$ or digitalin gr. $\frac{1}{100}$.

- (i) Dannermann uses a decoction of a native African remedy, the leaves of *Combretus Raimbanthus*. (Decoct. fol. combreh 24 parts, water 1500 parts used as a tea during the day) To promote diuresis potassium acetate is used.

(*A system of medicine by Osler and McCrac, Vol. 1, page 459*)

- (ii) Dr. Newell in the *Black water fever* (*bilious malignant tertian ague*) page 34, recommends Ext. cassia beareana lig. 3i-ii as a cardiac tonic, a diuretic and a diaphoretic.

It breaks the course of the fever and has an antiperiodic effect like quinine.

It should be given three or four times a day.

4. Relieve the liver congestion by a big dose of mag. sulph.
5. Stop bleeding by calcium chloride gr. xv well diluted every four hours It increases the tonicity of the blood, and acts also on the renal cells.

Malarial cachexia, a sequela of chronic malaria, yields to injections of cacodylate of quinine.

CACHECTIC FEVER.

(LEISHMANIASIS, KALA-AZAR.)

It is caused by Leishman Donovan body. It is not a Malarial fever in the truest sense of the term and mosquito takes no part in the roll of the disease.

Bed-bug [*cimex rotundatus*] is the intermediate host of the transmission of this disease.

Dr Price remarks —

“A regular hot-bed of *Kala-azar*.” (*Fevers in the Tropics*, by Leonard Rogers, page 93)

The Characteristic signs and Symptoms are :—

1. Spleen and Liver much enlarged, hard and cartilagenous to touch.
2. Pigmentation of skin.
3. General anæmia
4. Bleeding from nose and gum
5. Marked emaciation and night-sweats.
6. Double rise of temperature.

The treatment is summarised as follows :—

- (i) During early stage of the disease.
- (ii) During later stage of the disease.

i. Treatment during early stage of the disease.

Quinine has little or no specific action in this fell disease, but it may be used in tonic doses.

The following is the ideal method of treatment as sketched by the writer :—

1. R

Ext Berberis aristatae liq	3 vi
Quinine lactate	3 i
Liq Sodii arseniatis	m. XL
Spt. Chloroformi	3 iss
Inf. Calumbae	ad. 3 viii

mft. Put 12 marks : sig. one twice a day after meal.

2. R

Sodu cinnamate gr. ii
 Confec Rosae q. s

mft. For a pill. sig. one twice a day.

N.B.—These medicines (mixture and pill) are to be used alternately every week.

Wilson remarks that nuclein has a marvellous action in this disease. It increases leucocytosis, yeast-nuclein is a grey white powder, soluble in alkaline sol; dose 10 grs. six times a day.

ii. Treatment during later stage of the disease.

Subcutaneous or preferably intramuscular injection of "Soamin" Tabloid gr v dissolved in water twice a week, or atoxyl. gr. $\frac{1}{4}$ to 3 dissolved in 20 minims of distilled water twice a week.

N.B.—These organic preparations of arsenic are lauded to be highly beneficial in this disease, marked increase of leucocytosis is a good sign and the prognosis seems favourable. The injection should be made fresh before use.

The following are recommended :—

1. Virol. dose a dessertspoonful with 4 ozs of milk twice a day.
2. Raw meat juice 4 ozs. in the morning.
3. Fruit juices *e.g.*, pomegranate, grape, oranges, &c.
4. Milk and its derivatives.
 - a. plasmon.
 - b. plasmon arrowroot if diarrhœa.
5. Sanatogen and ovaltine act well.
6. Rice and washed bread are allowed.
7. Iron somatose and milk.

During convalescence change of climate is recommended,

PLAGUE.

Plague, or “ Mohamurrie ” as it is called in India, is an acute infective febrile disease caused by a micro-organism, the *Bacillus Pēstis*.

Plague may be conveniently divided into two forms :—

- I Pestis Major.
- II Pestis Minor

The former is again sub-divided into

- 1. Bubonic.
- 2 Septicæmic.
- 3 Pneumonic types.

As regards the channels of reception of the bacillus, it appears probable that the bacillus may enter the body through a lesion of the skin , such a mode of entrance would account for the bubonic and septicæmic cases. In plague pneumonia the infection takes place through the respiratory tract, though there is no direct proof of this. No evidence has been obtained that the bacillus has entered through the stomach or intestines by infected food, though rats fed on infected material contract the disease.

The writer has noticed the following points : -

- 1. Plague spreads like a wild-fire throughout the length and breadth of India during spring and early summer—the so-called Plague Season — and makes a havoc especially in crowded cities
- 2. The disease is aggravated by over-population with consequent insanitary surroundings.
- 3. During the epidemic the rats begin to die with signs and symptoms of asphyxial death.
- 4. The virulence of the disease is checked after good showers of rain.

5. Dusting lime freely on the soil has proved to be beneficial.
6. The disease is very rare, except imported cases, in undisturbed soils with plenty of trees and vegetations.
7. Statistics show that people occupying the unpaved first floor are more prone to the disease than people of the second or third floor.

From the above facts the writer concludes that plague, in spite of the time-honoured bacillary theory, seems to have some relation with slow form of carbon-di-oxide gas poisoning.

The reader may know that earth radiates more heat with the evolution of carbon-di-oxide gas after winter season, that rain water dissolves carbon-di-oxide gas as it percolates through the soil, that lime coming in contact with CO_2 form insoluble calcium carbonate, that vegetations take carbon out of the soil and fix them to form a part and parcel of their own bodies, that rats living close to earth begin to suffer first, and that an unpaved first floor room is subject to be infected by the gas generated from the bowels of earth.

The writer now proceeds to narrate briefly the mode by which the disease spreads :—

1. By the agency of man, *e.g.*, an infected individual arrives in a village and a week or ten days later dead rats are found in the house. The area in which dead rats are found now increases and soon a plague case appears in the vicinity.
2. By infected clothings, &c., conveyed from an infected place to a healthy individual.

3. By migration of rats, fleas on infected rats, &c
Hence the preventive treatment involves—

- [i] Control and supervision of individuals coming from infected area.
- [ii] Disinfection of clothes.
- [iii] Destruction of rats in the area to be protected.

The treatment of plague may be considered from the following points of view :—

- i Prophylactic.
- ii Therapeutic.
- iii Hygienic.
- iv Dietetic.

The following pill may be tried as a preventive remedy.

Rx

Quinine hydroch	grs. ii
Camphor	gr. $\frac{1}{4}$
Ipecacuanha	gr. $\frac{1}{4}$
Carbolic acid	m. $\frac{1}{4}$

Mft. for a pill : sig. one in the morning and another in the evening.

1. Prophylaxis :—

1. Personal and domestic cleanliness are of the first importance.
2. Vermin and insects which infest the house are capable of harbouring the plague bacillus, and of conveying it to human beings ; hence try to dispel them by the fumes of sulphur, resin, &c.
3. Remove dust, dirt and all filth.
4. Rooms should be well ventilated.
5. Remove food from the room of the sick.
6. Out-door exercise is good.

7. Disinfectants must be freely and frequently used for the hands and sprinkled about the floor.
8. Manson recommends the destruction of rats as a preventive measure. He tersely puts it: "To prevent cholera the tea kettle, malaria the mosquito net, and plague the rat trap" (*B.M.J.* *ii.* 1899, *p.* 922).
- A. Buchanan in *B.M.J.* *May 30, 1908*, remarks that the presence of cats in villages is a great protection against plague, and concludes that when the number is sufficient all risk of plague is abolished.
9. Haffkine's fluid for inoculation

The Indian Plague Commission has reported in favour of preventive inoculation (vide *The Practitioner: April 1900, p. 458*.)

CONDON in "The Bombay Plague" concludes :—

- (a) that inoculation is harmless :
- (b) that when given in the incubation stage, it has in many cases the power of aborting the disease ,
- (c) that inoculation affords to all those inoculated a strong protection against an attack of plague ;
- (d) that in the few cases where inoculated people are attacked, a very large proportion recovers.

II.—Therapeutic :—

The writer supports the statement of JAMES CANTLIE :
 "No specific cure for plague by Medicine is known."— *Practitioner*, Special Plague Number,
(Oct. 1900, p. 387).

Promptly treat symptoms as they arise.

Internally :—

Open the bowels by calomel followed by a saline aperient in the morning.

Prescribe any of the following :—

i. \mathcal{R}

Acid Carbolie	m. ii
Tinc : Aurantii	3 ss
Aq. Chloroformi	ad. 3 j

mft. for a dose : sig one every 4 hours.

ii. \mathcal{R}

Cyllin		3
Syr. Aurantii	}	3 iii
or		
Syr. aromaticus		
Aq Anethi	ad	3 vi

mft. put 6 marks sig. one every 3 hours

iii \mathcal{R}

Liq Iodine Trichloride	m. iii
Glycerine	m. xx
Aq Rosæ	3 iv

mft. for a dose : sig. one every 3 hours.

N.B — Put into a bottle Pot. Iodide 180 grs. and Pot Chloras 180 grs , shake them well for 5 minutes, then add 3 ozs. of pure hydrochloric acid and keep the whole mixture in a cold place for 10 days , then throw out the mother-liquor and take out the crystals only. Then weigh them and add water 20 times the weight of the crystals. Dose: 15-40 m : 4 to 6 times a day

As a preventive : —5 m. for a dose once a day.

After 4 to 8 doses temperature falls down, when prescribe :—

\mathcal{R}

Caffeinæ citras	gr. ii
Quinine Sulph	gr. ii
Acid Carbolie	gr. i

mft : for a pulv in cachet sig. one every 3 hours ; in addition to the above medicine 3 or 4 times a day.

Locally—

1. Antiphlogistine over buboes.
2. Half a dozen leeches over buboes.
3. An ointment of finely powdered 'Gila' with honey to be applied over the buboes every 2 or 3 hours till they subside.
4. Hot compress of hydrag. perchloride gauze to encourage suppuration, when open it,
5. "Chitrak" paste :—(Rub root of "chitrak" with cold water against a stone :) apply it as thick paste over the buboes every quarter hour till it has been applied three or four times. By this time a decided inflammation ensues ; apply hot poultices to hasten the process, when operate.

Treatment by Anti plague Serum :—

The first injection should be 30 c.c.—50 c.c., it should be followed up within 6 to 8 hours by another, and then if necessary by a third. Thereafter on the abatement of fever, and general and local improvement, one or two small injections of 10 c.c. should be given at intervals of 24 hours.

1. Yersin's Serum—Dose 200 c.c. to be given subcutaneously.
2. Lustig's Serum—Dose 200 to 2,000 c.c. to be injected under the skin.

The Serum had little effect in septicæmic cases, but appeared to be of some *service in* bubonic cases with multiple buboes.

(*Green's Encyclopædia and Dictionary of Medicine and Surgery, Vol. viii, page 125*).

Treatment by injections, —

(1) *Formaldehyde or formalin* —

DR. BARROW of New York recommends 500 c.c. of formalin (40% of formaldehyde) strength 1 in 5000 to be injected subcutaneously; the effect is magical with a fall of temperature. Blood is found to be loaded with streptococci.

The writer recommends 20 drops of 1 per cent. Sol. of Formalin in saline sol. to be injected in the vicinity of the buboes, every 6 hours till the temperature falls down to normal.

Paint locally over the bubo the following :—

R

Formalin	m. v
Glycerine	3 ii

(2) *Sodium Cinnamate* —

20 drops of a half per cent. Sol. of Sodium Cinnamate have been injected in the neighbourhood of the bubo every 6 hours by the writer with some success; 2 or 3 injections are required; the object being to increase leucocytosis.

Treat the patient symptomatically :—

1. *Cardiac Debility* :—

(a) Hypodermically :—Tabloid of Digitalin et Strychnine gr. 1/100 each, 2 or 3 times as required.

(b) Internally :—

i. Liq. Adrenalin (1 in 1000.)

Dose : 5 to 10 drops with saline solution every 4 hours.

ii. Ext : Renaglandin (Oppenheimer Son & Co.)

Dose : 5 to 20 m. per mouth or subcutaneously.

N.B.—In toxæmia of bacterial infections with low blood-pressure, hypo-thermia and cyanosis it is specific. It raises the blood pressure.

5 *Diarrhœa*—

It seldom requires treatment ; if severe, the writer recommends the following .—

R

Salol	gr ii
Dover's powder	gr ii
Bismuth Subgallate	gr. x
Pulv : cretæ aromatic	gr. x

mft. for a Pulv sig one every 4 hours.

6. *Hyperpyrexia* :—

Sponge the body Ice over the head and the spine, hot drinks, and brandy internally

N.B.—Antipyretics, *e.g.*, Antipyrine, Phenacetin, &c, are forbidden

7. *Vomiting* :—

Ice to suck, mustard plaster over epigastrium and half a teaspoonful of each of the following :—

Caffeinæ Citras Effervescence, and Ceru Oxalas Effervescence (Bishop's) of each half a teaspoonful every 3 hours.

III. Hygienic Treatment.

- 1 Excreta and sewage must be disinfected before disposal
- 2 Rats must be caught, not fumigated out of their runs. Dead rats should on no account be handled, pour plenty of kerosine over them before removal.
3. Burn all clothings, beds, &c.
- 4 Conveyance should be made by ambulance waggons.
- 5 Disinfection of houses, rooms, must be done thoroughly.

IV. Dietetic Treatment.

Milk is not well tolerated by the patient :—

Plasmon, sanatogen, allenbury's diet, are good.

Jug soup, chicken broth, beef tea are well borne.

The nurse must be told of the danger of sudden death from allowing the patient to get out of bed or even to sit up in bed ; hence the necessity of feeding the patient with a feeding cup. Palatable peptone, panopepton and peptone wine are excellent diets.

CÈREBRO-SPINAL MENINGITIS.

Cerebro-spinal Meningitis means acute inflammation of the meninges of the brain and spinal cord due to the presence of *Diplococcus intracellularis* (*meningococcus*). It is not contagious in the ordinary sense of the term.

Prof. Dana classifies it as follows :—

1. Ordinary form.
2. Abortive form.
3. Fulminating form.
4. Typhoidal form.

There are four stages of the disease *viz.* :—

1. Prodromal.
2. Irritative
3. Depressive.
4. Paralytic.

For practical purposes the treatment is grouped under two headings ;—

- I. Preventive,
- II. Therapeutic.

I. Preventive Treatment.

The organism primarily lodges in the tissues of pharynx, tonsils and other parts of upper respiratory tract hence cleansing the throat with some antiseptic spray *e.g.*, hydrogen peroxide spray, chloretone spray &c or gargles, *eg.* listerine, glycothymolin, &c or application of a solution of equal parts of resorcin and alcohol, is highly scientific. The alcohol must be heated before the resorcin is added. Two applications, one on each side of the uvala, are sufficient. The stomach must be empty. The solution is said to destroy every organism it comes in contact with. The applications are best repeated every forty-eight hours. Six treatments will usually suffice —DR. SEIBERT.

Schneider [*La Clinique*, Mar. 11, 1910] recommends the following inhalant as a prophylactic:—

R

Iodi	℥iss	6·0 grammes
Potass. iod.	gr. xlv.	3·0 „
Guaiacol	gr. xv.	1·0 „
Thymol	gr. ii	0·13 „
Alcohol [60°]	℥iii.	85·0 c. c.

m. sig.—“A little to be added to hot water and the steam inhaled.” Painting the naso-pharynx with glycerine of iodine (1: 30), and gargling with 10 per cent. hydrogen peroxide are recommended at the same time.

II. Therapeutic Treatment.

I. Medicinal.

A. During early stages of the disease

B. During later stages of the disease.

ii Serum Treatment.

iii Lumbar Puncture

iv Dietetic Treatment

A. During early stages of the disease.

Absolute rest in bed is indispensable. Put the patient on water bed if possible in a dark room, place carpet on the floor to lessen noise, head and shoulders should be raised, and remove all sympathetic friends.

Internally—

Open the bowels by calomel followed by saline in the morning if the bowels be not moved.—

The writer recommends the following:—

R

Liq. Hdrarg. perchloride	m x
Ext. cinchonæ liq.	m iv
Tinc. Belladonna	m ii
Glycerine	m. x
Aq. Camphoræ	ad. ʒ ss.

mft. for a dose sig. one twice or thrice a day.

N.B.—Alcohol is contraindicated as it dilates the peripheral vessels and thereby favours exudation. Musk and

camphor are best stimulants. Von. Ziemssen says 'Morphia may be regarded as one of the most indispensable remedies in the treatment of epidemic meningitis.

If the patient be very restless and delirious occasional doses of chloral and opiates will soothe the nervous system.

Dr. S. J. Crowe in *the Johns Hopkins Hospital Bulletin of April 1909*, recommends urotropin in meningitis. Dose 10 grains of urotropin gradually increased to 30 grains a day, it should be diluted with large quantities of water and should be given by the mouth. Urotropin appears in the cerebro-spinal fluid from 30-60 minutes after the medicine has been administered.

Locally :—

1. Emplastrum-cantheridis over right mastoid process or a blister over nape of the neck
2. Hydro-therapy for pyrexia. A pair of ice-bags over head, front and back to control cerebral circulation
3. Hydrarg oleatis to be rubbed over the head and along the spine

Writer's formula :—

Rx

Hydrarg. oleatis 10 per cent	℥ iv
Lanoline	ad. ℥ ii

mft. to be rubbed over the head and spine for half an hour.

- 4 Warm bath is a specific method of treatment of Cerebrospinal meningitis. (*Twentieth Century Practice of Medicine. Vol. xvi, page 179*)

B. During later stages of the disease.

(When there are meningeal thickenings and deposits)

Per rectum : -

Open bowels by glycerine enema or glycerine suppository.

Parke Davis and Co.

By mouth,

Writer's prescription.

℞

Liq Hydrarg. perchloride	3 ss
Pot Iodide	gr. iii
Pot Bromide	gr. vi
Sulphuric ether	m. xv
Aq Camphoræ	3 ss

mft for a dose : sig one thrice a day.

1. Don't forget to pour a drop of honey on the tongue when the child screams. It keeps the mouth moist.
2. Don't forget to clean the mouth by means of cotton pencils, with some antiseptic lotion *e.g.*, listerine, Glycothymoline, alkathymol, &c,
- 3 Don't forget to have a vigilant eye on bed and clothings lest there be ants, &c, Bed should be of soft cotton and the sheets of soft linen
- 4 Don't forget to examine the conjunctivæ daily It is the index of cerebral congestion ; wash the eyes daily with boric lotion
- 5 Don't forget to massage the body very gently , it helps circulation.
- 6 Don't foment the limbs rashly during paralytic stages , it may lead to nasty ulceration as the sensation is much impaired

Local paralysis :—

1. Massage with lard or pure mustard oil.
- 2 Electricity.

ii. Serum treatment.

iii. Lumbar puncture.

After a Lumbar puncture withdraw as much of cerebro-spinal fluid as possible. It has two-fold advantages —

- i. It lessens the pressure
- ii. It removes a large number of diplococci.

The patient should be in a sitting posture with the *head strongly flexed*, in order to encourage the flow of the fluid.

When the serum is to be injected, the patient should be lying down with *head extended* in order to facilitate the entrance of the fluid.

The serum of Flexner and Jobling is the best of all serums that now flood the market.

The serum should be warmed and injected slowly, the dose being 30-40 c. c., repeat the dose in 12-24 hours if there be no improvement. Frequently a single dose is enough

The proper method of performing Lumbar puncture, as described by Henry Heiman, M. D. New York:—"We aim to obtain the cerebro-spinal fluid by entering the sub-arachnoid space, below the point where the spinal cord proper terminates, so as to avoid any injury to this important organ. It has been found that even in infant, the cord does not extend below the level of the 2nd lumbar vertebræ, although the sub-arachnoid cul-de-sac extends below the 4th lumbar interspace. This fact gives us the selection of the proper site of puncture in infants, which should be in the 4th lumbar interspace, *i.e.*, at the level of the highest points of the crest of ileum. The patient should be placed on the left side in the horizontal position, at the edge of the bed. An assistant should hold the patient by gently grasping the neck and legs, and by exerting moderate anterior flexion of the spine, separate the spinous processes, thus facilitating the introduction of the needle. I prefer the use of the original Quincke needle, to which I have added a movable flange-like guard. This, set at the proper distance: *i.e.*, 2-4 c. m. in children and 4-7 c. m. in adults, just previous to the puncture, prevents the needle from penetrating too deeply, and thus avoids the injury of the anterior venous plexus. It also helps to steady the needle after its introduction. The skin at the site of the puncture having been surgically prepared and wet bichloride

towels spread on the table and floor, the operator inserts the needle at an angle of 10° to the axis of the spine in the median line in children and 5-10 m. m. to the right in adult.

When the needle is in the proper place, the stilette is removed and the conus inserted into the hilt of the needle, thus connecting the latter with the manometer by means of the tubing

The hydrostatic pressure is then measured. The fluid is allowed to flow into a sterile test tube by lowering the manometer. The withdrawal of the fluid should cease when the hydrostatic pressure is 3 to 5 c. m. which is the normal pressure.

Our experience with lumbar puncture at Mount Sinai Hospital had led us to place the indications for its performance as follows :—

- 1 Violent onset with convulsions, high temperature, chill, marked restlessness, hyperæsthesia and cephalic cry
2. Severe and persistent headaches
3. Persistent vomiting.
4. Marked rigidity of the neck or opisthotonus.
5. Marked delirium or coma with dilatation of pupils.
6. Marked bulging of the anterior frontanelle or the presence of a marked Macewen sign.

In the New York State Journal of Medicine June 1909, Dr. L. E. Holt, M.D., L.L.D., reports the treatment of cerebro-spinal meningitis by the serum of Flexner and Jobling with a report of 523 cases of which 368 terminated in recovery and 155 in death, a mortality of 29.6 per cent.

John J. Weaver: *Lancet*, April 16, 1910, reports a case successfully treated with Flexner and Jobling's serum. After removing some cerebro-spinal fluid by lumbar puncture, 30 c.c. of the serum was injected. This was repeated on the four succeeding days, and on the sixth day a final dose of

15 c.c. was injected. Improvement was noted soon after the first injection of the serum, and in a week's time the patient was practically well.

R. R. Standage and A. J. H. Russel (*Indian Medical Gazette*, April 1910) give an account of a case of staphylococcal cerebrospinal meningitis in a boy about 4 years of age which was treated by specific vaccine. The initial dose was 250,000,000 cocci, but the dose was afterwards raised to 420,000,000. The case terminated favourably. The authors intend in future to give large doses at once in any similar cases they meet with.

There is no serum as yet which will aid us in conquering the affection. This is due to the fact that the meningococcus does not generate toxins such as those of the bacillus of diphtheria.

(*A system of medicine by Osler and McCrae, Vol. ii, p. 517.*)

iv Dietetic Treatment.

Feed the patient with nutritious diet : -

(a) Liquid meat diet *e.g.*, panopepton, palatable peptone, jug soup, broth, &c., are excellent stimulants; they contain extractive.

(b) Milk diet :—

1. Milk peptonised with Fairchild's peptonising powder or Benger's food.
2. Horlic's malted milk especially at night when there is difficulty of procuring fresh milk.
3. Mellin's food.
4. Allenbury's diet.

N.B. If the patient be semi-conscious carefully feed him by **rectal** or by nasal tube with the diet as mentioned above.

HOOPING COUGH.

Hooping cough is a specific infectious disease characterised *clinically* by a paroxysmal cough, followed by a long drawn inspiration during which the "hoop" is produced and usually terminated by vomiting.

The French authors describe the disease under the name of "le toux qui houpe" the cough which cries aloud.

Prophylaxis: —

Isolation and fresh air are strongly recommended, stimulation is to be practised from the very beginning of the treatment. In B. M. J. June 12, 1897, Dr Philip J. Bryan advises Naphthaline in the treatment of pertussis. The drug is well rubbed into the child's clothes, and the floor of the chamber sprinkled with it

The frequency of the paroxysms are thus diminished and the patients made more comfortable in every way.

Medical Treatment.

There are three stages of the disease, *vis*:—

1. Catarrhal.
2. Paroxysmal.
3. Convalescent.

1. Catarrhal Stage :—

Locally.—

- (a) Application of asaprol (1 in 100 of water) several times a day to the region about the glottis is followed by ready relief.
- (b) Spray inside the throat with 2% sol. of salicylic acid or resorcin every 2 or 3 hours during inspiration.

E. SMITH.

- (c) Dr Kilmer recommends an elastic abdominal belt, which by its support to the abdomen seems to prevent vomiting and perhaps even to shorten the disease.
- (d) G. A. Stephens, M.D, B.Sc, Lond (*Lancet. December 3rd, 1809*), in a number of cases syringed the ears night and morning with warm boric "lotion," or water, and painted the meatus with hydrochlorate of cocaine gr. 23, glycerine 4 drachms, solution of perchloride of mercury m 20, water to an ounce. "In every case the patient was benefited and the whooping cough was got rid of." He gives notes of eight cases which in a few days entirely lost the bouts of whooping cough, though in some bronchitis lasted for several days. His explanation is that the cough is an aural reflex from slight local inflammation of the meatus
- (e) Mohn, of Norway advocates frequent disinfection with sulphur of the room occupied by the patient. He claims to have cut short the disease by the method.

Internally:—

Rest in bed is indispensable. Fever and cough are the distressing symptoms, hence use sedative expectorant as follows:—

Rx

Vin. antimonialis	m. j
Vin. Ipecacuanhæ	m j
Sodii Benzoas.	gr. ii
Sodii Bicarb	gr. v
Spt. Ammon aromatic	m v
Aq Anisi	ad. 3 iv

mft. for a dose: sig. one every three hours.

2. Paroxysmal stage :—

Inhalation —

(a) R.

Essence of Turpentine	1 part.
Sulphuric Ether	4 parts.

(b) Amyl nitrite.

Mechanical : —

Immediate relaxation of glottis usually follows after dipping the child's hand into cold water. (*Allbutt's system of medicine*, 1906, Vol. ii, p. 585).

Internally .—

Writer's favourite formulæ :

(1) R.

Antipyrine	gr. viii
Quinine hydrobromate	gr. xii
Tinc. Belladonna	m. xvi
Syr. Tolutanus	ʒ ij
Aq. Chloroformi	ad ʒ iv

mft. put 12 marks : sig. one thrice daily.

(2) R.

Tinc. Quininæ ammoniata	ʒ ss
Ext. Ipecac. Liq.	m. ½
Sodii. Bromide	gr. ii
Syr. Chloral	m. xv
Aq. Anisi	ad ʒ ss

mft. for a dose : sig. one thrice a day.

N B.—Dr Sticker recommends quinine hydrochloride gr. iss. three times a day to a child a year old, and twice as much to one two years old.

(*Nothnagel's Encyclopædia of Practical Medicine-Hooping Cough*).

Dr. Norman Bridge recommends insufflations of quinine into the throat and nose.

(*Hare's system of Practical Therapeutics Vol. ii, p. 296*).

(3) R

Bromoform	m. xvi
Spt. Rectificatus	3 ij
Glycerine	3 xii
Tinc. Cardamomi Co.	3 ij

mft. dose a teaspoonful to be given in an ounce of water every six hours.

N. B.—The last dose in the bottle may, owing to the weight and insolubility of the drug, contain an excess, no matter in what way it may be suspended.

This last dose therefore should be thrown away.

✓(4) Pertussin containing thyme is recommended by German physicians.

(3) Aristochin is beneficial in malarial cases, dose being $\frac{1}{4}$ — $1\frac{1}{2}$ gr. for an infant of the breast.

The following is an extract from Ander's "*System of Medicine*."

The throat and nose are sprayed regularly with a mixture of equal parts of peroxide of hydrogen and glycerine. If there is any nasal discharge an ointment is applied to the nares every two hours, containing menthol, boric acid and white vaseline. The tasteless tannate of quinine is given also in small doses, in solution to infants, and in chocolate tablets to children of four years and upwards. These are all ordered for their antiseptic effects. In addition, emulsion of asafoetida is given as an antispasmodic. This stimulating and antispasmodic expectorant is also carminative in action, so much so that it must be administered very carefully or else it will upset the stomach.

Symptomatic treatment.

Excessive vomiting.—

R

Cocaine Hydroch	gr. $\frac{1}{2}$
Syr. glucose qs.	

mft. for a pill : sig. one twice a day for a child of 1 year old.

2. *Constipation.*—

Castor oil emulsion is good.

3 *Excessive spasm.*—

R

Pot bromide	gr. ii
Chloral hydras	gr. i
Syr. simplex	℥ ss
Aq. Chloroformi	ad. ℥ ii

mft. for a dose : sig. one thrice a day.

N. B.—*Citric Acid in Hooping Cough.*—A 10 per cent. solution of citric acid in simple syrup is stated by M Tilho to be a useful remedy in the treatment of pertussis. It is employed locally by swabbing the periglottic region of the larynx. It also proves to be an efficient prophylaxis against infection. He has succeeded in preventing the disease in many children living with others infected by this means, or merely by the administration of small quantities of citric acid lemonade. (*Boston Med. Jour Surg.* cxxxviii, 626.)

3. *Convalescence.*

General tonic and change of air are recommended.

Hygienic treatment :—

Berguete strongly advocates the use of warm bath : room should be well ventilated.

Dietetic treatment :—

Milk and its derivatives, virol. albuminoids, meats and eggs.

The Journal of Practical Dietetics and Bacterio Therapeutics May 1910 contains the following advices :—

“For children under 2 years of age only liquid food is advisable while the disease is at its height. Milk with barley or lime water or peptonized milks, and chicken or calves’

feet broth are suitable. Valentine's meat juice, Benger's food made thin, the yolks of eggs beaten up with milk. It is a good plan to give the food immediately after the paroxysm of cough when followed by vomiting, so as to insure time for its absorption before the next spell of coughing comes on.

Children over 2 years of age who are ill enough to be confined to bed may be allowed ordinary diet, eschewing indigestible articles or such as are likely to cause acidity, viz., raw fruit, nuts, and the like, farinaceous puddings, jam, and fruit. Children suffering from whooping-cough should be frequently weighed, because if there is no loss of weight the occasional vomiting of food does not matter"

SMALL-POX.

The treatment of Small-pox is divided under four groups
viz :—

- i. Preventive
- ii. Hygienic
- iii Medicinal.
- iv. Dietetic.

I.—Preventive :—

A. Personal—

1. Vaccination: an outcome of Edward Jenner's steady labour, his name will live to the end of recorded time as one of the glories of British Medicine.

B. General—

1. The Scales that are peeling off during the stage of convalescence are the very cradle of the germs. The Hindus of yore had discovered this and had formulated a practice which has turned into a

religious rite of collecting and burying the scales and thereby minimising the ravages of the disease, a better practice will be to burn them in brisk fire and destroy the poison in situ.

How long the virus retains its infectiousness outside the body is not known.

(*A system of medicine by Osler and McCrae, Vol. ii, p. 297.*)

For the safety of the community should not the authority think it necessary not to allow anybody convalescing from Small-pox to mix with the public? The patient is at this stage a living propagator of contagion. The macroscopic and microscopic scales float in the atmosphere and infect people through respiratory or digestive tracts. The writer has seen scores of cases travelling in train, tram car, or walking in the street without anybody objecting because of ignorance.

But we must not forget that ignorance is the greatest foe to the progress of humanity and to the profession at large. Ignorance is the enemy against which we must fight.

Plato had well said :—

“It is better to be unborn than untaught, for ignorance is the root of misfortune.”

As the authorities are taking a keen interest about Vaccination they should not turn a deaf ear to check the ravages of Small-pox by allowing the convalescent to mix freely with the public. The danger is two-fold : *viz.*, it not only infects the people but renders one liable to the danger of heart failure as the heart becomes very weak.

In the year 1909 Small-pox spread like a wild fire and made a havoc throughout the length and breadth of Bengal.

The writer suggests the issue of printed pamphlets to be posted at every turn of the street to make the people understand about its gravity, to educate them and to raise them from the platform of their ignorance, *viz.*, the contagion exists in dried scales, dust-like powders that hang in the surrounding atmosphere, secretions and excretions, and exhalations from lungs and skin, and thereby save them from being infected with pox.

2. Burn scented aroma, sulphur, morning and evening, to scent the air.

II. Hygienic. —

1. Isolate the patient to a well-aired dry room, remove all furniture and utensils where dust-like powder may adhere and be the nucleus in future of other cases: When the patient is free from the malady, disinfect the room especially the ceilings and corners with antiseptic solution *e.g.*, phenyle or Hydrarg'perchloride sol followed by a white wash

2. Corresponding windows adjacent to patient's bed are to be kept close to avoid draught

3. Doors and rest of the windows should be kept open, but to be nicely screened with red clothes to cut off the actinic rays of light.

N.B.—Of the seven colours of light, violet is the most active chemical ray while red is the least

The chemical rays of light and malnutrition of the eruptions are the prolific source of pitting in small-pox, now if we allow light to pass through a red medium and supply proper food in the shape of soluble albumen as naturally present in cocoanut water to the cells of eruptions, I think we can nip pitting in the bud.

- 4 Clothes and bed sheets should be frequently changed
- 5 Use plenty of essences to perfume the air of the room the repugnant odour inhaled when stepping inside the room is indeed sickly.

6 Attendants and nurses should wash their hands, nose and mouth with some antiseptic lotions, *e.g.*, alkathymol or glycothymolin one drachm to one ounce of water, after being out from the sick room they should if possible change their dress before mixing with the public, as dust-like powder adheres to the clothes

III. Medicinal :—

Most of the uncomplicated cases cure themselves without the aid of medicine Rest, total submission to the will of God, plain milk diet and cold drink are the be-all and end-all of Hindu system of treatment The less you medicate in these eruptive fevers the better will be the result.

Internally :—

- 1 Open the bowels by castor oil emulsion or by a luke warm soap water enema to overcome putrefactive toxæmia. Don't give powerful purgative which will do a world of mischief as the mucus lining of the gastric tract are tender, hyperæmic and even in patches swollen
- 2 The following combination is an invaluable remedy.

R

Pot. chloras	gr x-xv.
Acid carbolic	m. i
Nepenthe	m. iii
Syr. aurantii	ʒss
Aq. aurantii floris	ad. ʒ i

mft. for a dose : sig. one every 4 hours up to 4 doses

N.B.—If required give at night opium to soothe irritation and to induce sleep.

Subsequently saturate the patient with calcium sulphide and push on nuclein to stimulate leucocytosis and to prevent suppuration.

Treat the patient symptomatically :—

- (a) When nervous symptoms threaten to be predominant prescribe the following :—

R

Pulv. musk	gr. iss
Camphor	gr. i
Ext. Belladonna	gr. ½

mft. for a pill sig. one thrice daily

- (b) When there is bronchitis, &c., add pulv. ipecac syn emetin, pulv. Scilla to the above pill.

- (c) When mælina happens to intervene, liq. adrenalin (1 in 1,000) ten drops in water every 4 hours upto 4 doses acts miraculously. The skin should be cleansed as much as possible by tepid sponging once a day.

- (d) The eyes to be carefully attended to, wash them daily with the following :—

R

Cocainæ murias	gr. ii
Acid Boric	gr. xvi
Aq. Distil	ad ʒ i

mft. for eye lotion : sig. to be used thrice a day.

- (e) Mouth and nose where eruptions may appear should be washed with alkaline antiseptic lotion, e.g., alkathymol, glycothymolin or formolyptol: one drachm to an ounce of tepid water five or six times a day.

- (f) Immerman advises the use of full doses of alcohol and quinine, especially in the period of suppuration

(*A system of medicine by Osler and McCrae, Vol. ii, p. 299*)

Locally :—

1. Soak the papules constantly by lint with 5 per cent. carbolic lotion, the object being to anæsthesise, disinfect and deodorate the part.

Von Hebra recommends the frequent repeated application of moist cold, in the form of ice-water compresses or moist cold packs. It alleviates the discomfort and tension of the eruption

(*Nothnagel's Encyclopædia of Practical Medicine, Variola*).

2. When the papules become pustular, remove the pus and dress as mentioned above ; subsequently paint them with any of the following :—

R	Carbolic acid 3 ss Oil Olivæ 3 i	R	Ichthyol 10 Parts. Vaseline 90 Parts. it relieves itching, and prevent pitting. (Hoerschelmann and Koibassenko)
---	---	---	--

- 3 When the scales separate themselves, moisten the part with cocoanut water constantly :

If scars have formed Dr. Unna recommends thiosinamin to be applied locally to remove Small-pox scars. It is also used in the treatment of keloid and leprosy

IV. Dietetic :—

- 1 Plenty of milk. Asses' milk is said to be highly beneficial in these cases.
2. Plenty of cold drink to quench thirst
3. Fruit Juice.
- 4 Solids are to be carefully avoided.

MEASLES.

Measles may be defined as an infectious febrile disease attended by catarrh of the respiratory passages and by eruption of minute papules.

For clinical purposes we divide it under two divisions:—

- i. Prophylactic
- ii. Medicinal.

i. Prophylactic

Prophylactic treatment is subdivided into

A. Personal

B. General

A. Personal: —

- (a) Personal intercourse especially in schools is the main factor in disseminating the disease
- (b) Isolate the patient and keep him under observation
- (c) One per cent. sol. of hydrogen peroxide is employed in an ordinary atomiser: the spray is applied to the nose and throat.
- (d) Formamint tablet, it is a chemical combination of formaldehyde and sugar of milk.

The timely application of formamint not only wards off infection, but has a most remarkable effect in checking sore-throat, &

B. General: —

- (a) Cleanliness and ventilation are the two principal elements of treatment
- (b) Compulsory notification is indispensable to prevent the ravages of the disease.
- (c) The prevention of complication, *e.g.*, broncho-pneumonia is the most important part of the treatment
- (d) Keep the child in bed from the onset of symptoms till desquamation is over.
- (e) Guard the eyes by blue or green shades from light
- (f) Avoid dust and smoke as they tend to increase the irritation of the mucous membrane
- (g) Air of the room should be moistened artificially by the steam from a boiling kettle.
- (h) Windows of the room should be shaded by day to relieve photophobia.

II. Medical Treatment.

Locally : —

Cold bath may be allowed.

Sponging the body with tepid water and aromatic vinegar
is good

Internally . —

The disease will cure itself, in mild cases there is no need
of drugging the patient; in severe cases the writer
prescribes the following ;

(a) R

Liq Ammon Citratis	ʒ ii
Spt. Ammon Aromatic	m. x
Sodii Bromide	gr. 111
Sodii Benzoas	gr. 11
Syr. Tolutanus	ʒ ss
Aq. Anisi	ad. ʒ ss

mft for a dose : sig one every 4 hours

(b) Alcohol is recommended

When the eruptions are peeping on the skin the practice
of swabbing the body from top to toe with a branch of
'Nore' leaves, seems to me scientific, besides any medical
properties the leaves may possess, they stimulate beyond all
doubt the peripheral nerve-endings and exert a tonic influence
of causing the eruptions to appear in full swing.

During desquamation. —

Warm bath is recommended.

Antiseptic mouth washes. —

e.g, Alkathymol Glycothymolin, &c, are good.

During convalescence. —

The patient should be fed well, dressed warmly and
guarded from draughts when perspiring. Change
of air is recommended, 3 or 4 weeks after the dis-
appearance of the rash.

Treat the patient symptomatically :—

1 Cough should not be abolished but softened by Ammonia.

2 When there are symptoms of suffocation cold baths are useful.

3 In hæmorrhagic case the writer recommends—

R

Liq Adrenalin Hydroch 1 in 1000.

Drop doses every 2 hours for a child of five years old.

4 In hyperpyrexia warm baths are recommended.

5. In broncho pneumonia warm bath or foot bath after rubbing the sole with warm mustard oil, is highly beneficial.

6. In collapse diffusible stimulants are demanded ; injections of camphorette oil are valuable

Writer's favourite formulæ—

R

Musk	gr. $\frac{1}{2}$
'Mukaradhaj'	gr. $\frac{1}{2}$
Pulv. digitalis	gr. $\frac{1}{8}$

mft. for a pulv : sig one every 4 hours for a child of five years old.

7. Laryngitis demands warm steam sprays in the room.

8. Ear complications should be forestalled by warm instillations into the ears

9. Of internal remedies for cases marked by cerebral excitement none is superior to antipyrin

(*Twentieth Century Practice of Medicine. Vol, xiv, p. 169*).

Hygienic treatment :—

Isolation in a moderately light room, with plenty of fresh air, daily spongings and changing of the clothes, washing the eyes with a mild boric acid lotion, and cleansing of the nose,

throat, mouth and vulva are strongly recommended by Halle in *La Presse Médicale*.

The child should remain about 10 days in bed.

Dietetic treatment —

Diet should be bland and purgatives avoided, since diarrhoea is a frequent symptom due to the presence of eruptions inside the alimentary canal: Castor oil emulsion is best during constipation.

INFLUENZA.

Influenza is an acute contagious disease caused by a specific bacillus, and occurs in wide-spread epidemics,

The classical symptoms are :—

1. Sudden onset.
2. Headache.
3. Ache and pain in bones.

These Symptoms pass over within 2 or 3 days.

4. Tongue tremulous, large induretted by teeth and uniformly coated with thick fur.
5. Pulse 80 to 90 though fever is high.
6. Fever runs for 3 to 4 days.
7. Drenching sweat after 2 or 3 days.
8. Occasional rigors.
9. Dry cough; sharp sticky rales are audible at the base of the lungs.
10. Corneal symptoms

The mode of invasion of influenza, is believed by some authorities to be :—

- (i) through the alimentary canal with the inspired air,
- (ii) through the respiratory tract.
- (iii) through the conjunctivæ.

Treatment of Influenza.

Dr. Brainerd says "Nature, left to herself, cures grip with sweat and a diarrhoea"

If that is **Nature's Method**, it should be ours.

Physician should bear in mind the following points, *viz* :—

1. Glands are inactive throughout the body, *eg.*, tongue is heavily coated, bowels are constipated, and the skin feels hot and dry.

Calomel combined with sodium bicarbonate will stimulate the glands in the mucus membrane lining the alimentary canal and act as a cholagogue assisting the body in casting off retained waste-products and establishing free portal circulation.

Prof. Hare remarks that calomel is absorbed in our system by one-sixth of a grain.

R

Hydrarg subchloride	gr. $\frac{1}{2}$
Sodii Bicarb.	gr. ii

mft. for a pulv. sig one every hour till bowel is opened.

2. Stimulate the sudoriferous glands and relax the skin.

Shoemaker M.D., L.L.D., recommends dover's powder which will act as a sedative to the bronchial mucous membrane as well as an antipyretic.

Hence a good dose of Pulv : ipecac et opii at bed time is efficacious.

The writer recommends the following :

R

Ammon Salicylas	gr. v
Spt. ammon aromatic	m. xx
Sodii Bromide.	gr. x
Syr. aurantii	$\frac{1}{2}$ i
Aq. Chloroformi	ad. $\frac{3}{4}$ ss

mft. for a dose : sig. one every 3 hours.

The consensus of opinion that influenza should be treated by warmth is nearly unanimous

(*Nothnagel's Encyclopedia of practical Medicine, Influenza number, p. 697*).

Hot foot bath is very efficacious.

Rub the sole of feet with warm mustard oil for 10 minutes ; then dip them in luke warm water for 5 minutes; it induces sleep and alleviates bronchitis.

Inhalation of steam with Tinc Benzoin Co. or spray of hydrogen peroxide sol. inside the throat is recommended.

Oil of Eucalyptus has been for a time regarded by the English as a panacea for influenza, and the floors of rooms, &c., have been frequently flooded with eucalyptus.

(*Twentieth Century Practice of Medicine Vol. xvi, p 346*).

During later stages drachm dose of Tinc quinine ammoniata every three hours is beneficial.

DIPHTHERIA.

Diphtheria is a contagious disease, characterised *anatomically* by a membranous exudation on the fauces due to the Klebs-Loeffler bacillus and clinically by

(i) *Rise of temperature.*

The height of the temperature is no guide to the severity of the disease.

(ii) *Sore throat.*

The false membrane at first appears as one or several small white patches on the tonsils or uvula, and spreads subsequently very rapidly.

- (iii) *Tenderness and enlargement of the glands at the angle of the jaw.*
- (iv) *Albuminuria.*
- (v) *Vomiting.*
- (vi) *Paralysis.*
- (vii) *Eruptions.*

For practical treatment we divide it under two subdivisions :—

I. Prophylactic.

II. Medicinal.

I. Prophylactic :—

- (i) People suffering from sore-throat should avoid cold chilly wind, and dampness of soil.
- (ii) Live in up-storied dry room.
- (iii) Boil milk thoroughly before drinking.
- (iv) Avoid sick animal specially cat.
- (v) All articles that are used should be sterilised.
- (vi) Kissing children by sick person is strictly prohibited.
- (vii) Prophylactic inoculation is in its infancy, and its effect lasts only for about three weeks.

II. Medicinal :—

The main indications are :

- (i) To neutralise the toxin in the blood.
- (ii) To inhibit the local process.
- (iii) To strengthen the constitution to resist the disease.

Injection of anti-diphtheritic serum.

What is antitoxin? This is a very difficult question to answer. Behring believes that it is a proteid, and that the "antitoxic proteid bodies are carried into the blood from such cells as, during immunization from tetanus or diphtheria toxin, undergo altera-

tions of their actual and potential qualities." Others, however, hold different views. All we know at present is, that it is a soluble substance and that it renders the toxin inert.

500. Units of anti-diphtheritic serum should be injected into the skin of buttock or flank after the diagnosis is made; after 12 hours another injection of 500 units, and a third injection after further 12 hours.

In favourable cases the swelling of the fauces subsides, the membrane begins to disappear, the temperature falls down, the pulse becomes slower and the general condition of the patient improves in every way within twenty four hours. The earlier the cases come under treatment, the better are the results.

Among the untoward effects of injection are :—

- (i) Local abscess.
- (ii) Diffuse erythema.
- (iii) Urticaria.
- (iv) Albuminuria.

The beneficial effects of the treatment are seen in the great reduction of the mortality from the disease.

(ii) *A. Paint the throat with any of the following :—*

(a) R

Formaldehyde	10 parts
Glycerine	10 parts
Aq. Distil	80 parts

(b) R

Acid Trichlor. acetic	gr.xx
Glycerine	ʒii
Aq. Distil	ʒii

B. Spray inside the throat by means of a parolene atomiser any of the following :

(a) Hydrogen peroxide solution

(b) R

Papain : (Finkle)	ʒ ii
Hydro-naphthol	gr. iii
Acid Hydrochloric (Dil.)	m. xv
Aq. Distil	ʒ iv

C. (a) *Inhalation of medicated vapour of* Tinc. Benzoin Co. serves the purpose of internal fomentation. The air of the room should be saturated with this vapour.

(b) Inhalation of oxygen when dyspnoea occurs.

(c) Juice of pine apple is said to dissolve the false membrane.

(d) When the patient is in a very bad condition, give one drachm of Vin. Ipecac to induce vomiting : the membrane may be out during the act of vomiting.

(iii) *The following are the ideal prescriptions :—*

(a) R

Pot. chloras	gr. i
Quinine Hydroch	gr. $\frac{1}{2}$
Syr. Ferri perchloride	m. xx
Spt. Chloroformi	m ij
Aq. anisi	ʒ ij

mft. for a dose : sig. one thrice a day.

(b)

Liq. Strychnine Hydroch	m. $\frac{1}{2}$
Vini Gallaci	m. xx
Tinc. Cardamom Co	m. ii
Aq.	ad ʒ ij

mft. for a dose : sig. one thrice a day.

Treat the patient symptomatically :—

1. Threatening paralysis of diaphragm can be cured by small doses of belladonna ; it should be pushed on till its physiological actions ensue.
2. Bowels should be opened by enema ; don't give aperient.

- 3 Vomiting is checked by brandy and iron.
4. Threatening collapse may be overcome by :—

R

Liq. adrenal chloride (1 in 1000)	m. v
Aq. Camphoræ	3 j

mft. for a dose : sig. one every 4 hours.

Dietetic Treatment :—

- (i) Milk and its derivatives.
 - (ii) Sanatogen.
 - (iii) Allenbury's food No. 1.
 - (iv) Palatable peptone or panopepton.
-

Hygienic Treatment :—

Rest in bed is indispensable, room should be made dark, but must be well ventilated. Massage and electricity are to be used gently.

TETANUS.

Tetanus is an infectious disease characterised by paroxysms of tonic and sometimes clonic spasms due to the *inoculation* or *idiopathic*, infection of the 'pin-head' and "drum-stick" bacillus of Kitasato whose chief habitation is the earth, and especially horse manure

The classical symptoms are—

- 1 Stiffness of the Jaw and back of the neck.
2. Tonic rigidity affecting all the muscles of the trunk hence opisthotonos (*i.e.*, arching of the trunk backwards), emprosthotonos (*i.e.*, bending one side) and locked-Jaw in which the teeth can not be separated.

3. Clonic spasms in which the already rigid muscles become more contracted with agonising pain.
4. The temperature rises during the paroxysms.

The disease is caused by a bacillus which has a life circle of its own ; hence we can not root out the disease all at once. we should try to alleviate the particular symptoms such as the spasm ; and the drugs, employed to modify the progress of the malady have often done more harm than good.

The virulence of spasm has been abated by the following.

(i) Inhalation of chloroform during fits of spasm

(ii) R

Chloral hydras	gr. x
Pot. Bromide	gr. xxx
Aq. Aurantii floris	ad. ʒ j

mft. for a dose : sig one every 3 hours : if unable to swallow, give an enema of the above :—

iii. Morphin sulph gr. $\frac{1}{4}$ hypodermically

iv. Hutchings in the *Annals of surgery for July 1909* recommends 30 grains of chloretone dissolved in half a glass of whisky, sleep follows in a few minutes with natural relaxation.

If the patient be unable to swallow, 30 grains of chloretone dissolved in hot olive oil is to be given per rectum and retained.

Anti-toxin treatment :—

100 c.c. of the antitoxin should be injected within 24 hours, at different sites, in five doses.

If there be no improvement next day, give it again, and continue with daily injections of about 20 c.c.

Antitetanus dusting powder (P. D. & Co.,) is of great value in India, as a prophylactic in treating wounds. It consists of equal parts of chloretone and dried Antitetanus serum. It is applied as a dry dressing to wounds, the

moisture of the wound dissolves the dry antitetanus serum, and liberates its antitoxic properties. "In what manner the antitoxin is produced, whether by the toxin stimulating the cells or other tissues of the body to its formation, or by any change, such as an increased oxygenation, which the toxin itself undergoes, or from the disintegrating bodies of the exhausted or dead bacteria or by what other process, is not clearly known.

It seems to act, like the toxin, as a ferment. Thus we have in the blood, at the same time the two ferments—the poison and its antidote, the toxin and the antitoxin—the one leading to the production of the other"—*Allbutt's system of Medicine Vol 1 Page 787*.

Dietetic treatment :—

The administration of nutrient is the only hopeful treatment ; feed the patient well with port wine, beef tea, eggs, peptonised milk, sanatogen, panopepton and palatable peptone.

Hygienic treatment:—

The patient should be kept quiet, and protected from cold and from all draughts and other external irritants.

SEPTICÆMIA.

Septicæmia is an infective disease due to inoculation with pathogenic organisms which multiply in the tissues or escape into the circulation.

The physician should bear in mind four cardinal points as mentioned in erysipelas.

Writer's favourite formulæ :—

1. *R*

Quinine hydrochloride	gr. iiii
Tinc : ferri perchloride	m x
Liq : strychnine hydrochloride	m. iiii
Liq. Arsenic hydrochloride	m. ii
Glycerine	m xv
Aq. chloroformi	ad. ʒj

mft. for a dose, sig. one thrice a day.

2. Open bowel by effervescent Mag. Sulph mixture.

It should be administered early in the morning when constipated.

The infection may be—

- i. *Local, e.g.* boil or carbuncle.
- ii. *General, e.g.* some cases of anthrax.

Boils and Carbuncles.

The pathological explanation of these clinical features is as follows :—

The *Staphylo-coccus aureus* having found its way into the hair follicle develops along the hair until at a point deep down in the follicle it forms a colony. As a result of the presence of this growing colony of staphylococci a violent reaction of the tissues takes place, large numbers of leucocytes are hurried to the spot, the normal structures immediately around the colony become choked, they die, and are separated from the surrounding tissues, forming a slough, in the centre of which is the colony of staphylococci. Around and in the slough is the barrier of phagocytic pus cells. In this way the invading microbes become cut off from the rest of the tissues, and finally are cast off from them *en bloc*.

In the treatment of Boils, Carbuncles, etc., attempts should be made :

1. To destroy directly the Causative Cocci by the hypodermic injection of antiseptics, *e. g.* Carbolic Acid with marked success.

2. To stimulate the natural fighting powers of the invading tissues by hot fomentation or Vaccine inoculation. When we use a hot application or vaccine inoculation for these eruptions we are stimulating the powers of reaction of the invaded tissues, and by attracting more blood to the part we are increasing the amount present locally of those substances which the body manufactures for the destruction of the micro-organisms, or for their preparation for destruction by the pus cells, namely, the substance which Wright has called "opsonins."

A carbuncle differs from a boil in that—

1. It is larger and flatter
2. It involves not one, but many pilo-sebaceous follicles.
3. It tends to spread peripherally and not by invasion of follicles at a distance.

For practical purposes we divide the medical treatment of Carbuncle, Boil, etc. under two divisions:—

1. Local.
2. Internal

Locally:—

1. In quite early lesions paint the part with Collodion.
2. Injection of Carbolic Acid, one or two drops into an early boil
3. The following is certainly a reliable therapeutic fact. If fresh peroxide of hydrogen be injected freely and thoroughly into any carbuncle, once every day, it will certainly destroy it. Each time the carbuncle, is thus cleansed, a compress of absorbent cotton, saturated with a fifty per cent. solution of the peroxide, should be laid over

the carbuncle, covered with oiled silk, and retained with a light bandage I do not find that any other treatment than this is required. (*Marsh Ellingwood's Therapeutist.*)

4. Hot boric compress every 2 hours, followed by formidine dusting; cover the part with oiled silk followed by bandage.

or

After washing the wound with the following :—

R

Perhydrol (Merck's)	1 part
Aq.	9 parts.

mft sig. 3 per cent. Hydrogen Peroxide.

A thin layer of Afermol (a powdered animal blood serum prepared according to a special process) is dusted on the part and the whole is covered with a suitable dressing. It is indicated in the treatment of suppurating superficial wounds and open cavities

Substitol is indicated in the treatment of recalcitrant or badly granulating wounds and burns to encourage the healing process in skin graft, etc. After washing the wound with a 3 per cent. hydrogen peroxide solution (Perhydrol 1; Water 9), a thin layer of Substitol is dusted on the part and the whole covered with a suitable dressing. The use of Substitol is contraindicated in the presence of suppurative processes.

Pack the wound with Stypticin Gauze 30 per cent. (Merck's) if bleeding is profuse.

5. Bier's treatment by means of a specially constructed "Suction-glasses" has been highly extolled in the treatment of boils, etc.
6. A pledget of cotton soaked in carbolic glycerine is applied to the boil and covered with guttapercha

A.B.—**Substitol** and **Afermol**, two preparations obtained from blood, have been introduced into materia medica by Dr Salo Bergel and are intended to promote the healing of wounds by assisting the natural processes at work in the injured parts

tissue and a bandage. As soon as pus shows, the epithelium is gently turned back and the glycerine reapplied. As soon as a slight cavity appears some of the glycerine is gently inserted by means of a simple glass syringe, and again the poultice of glycerine is applied. In 2 or 3 days the slough separates, and after one final poultice of glycerine the cavity speedily closes, with a minimum of scar under any simple dressing

The hygroscopic action of the glycerine relieves the tension—the cause of the pain—very speedily, and it needs never recur.

Glycerine treatment was first advocated by Dr. John Duncan of Edinburgh. O. Ward (*B. M. J.* 19th June 1909.) recommended it with modifications.

- 7 Wright's method of vaccine inoculation Begin with 100 millions of staphylococci injections, and give a second dose of 200 millions or more after an interval of 3 or 4 days.

Stock vaccines of staphylococcus aureus of mixed cultures may be used

It is to be injected beneath the skin of the arm or of the back.

8. The writer recommends poultice of "Pulv. Saphonis" and "Akoghur."

Yeast fermentation is said to take place which is lauded to be beneficial.

Yeast has been recognised for centuries to possess certain "blood-purifying" properties.

In truth the employment of yeast for this purpose belongs rather to domestic medicine and savours of "Old women's lore."

9. R
 Salicylic acid gr. x
 Balsam gtt. xx

M. Sig—Saturate a piece of cotton, cover with oiled silk and strap down with adhesive plaster. Change it in 24 hours if needed. You kill the germ in a few applications.

Internally :—

1. Ringer recommends Calcium Sulphide in the treatment of boils.

Tabloid Calcii Sulphide gr. $\frac{1}{2}$ or tabloid Calcii Co. is the best preparation for administration.

Calcium sulphide usually is indicated in the case of skin eruptions due to the absorption of the toxins from putrifying food retained in the alimentary tract. Back in the dim past the parasitocidal value of sulphur was known Calcium sulphide liberates sulphureted hydrogen in the blood and acts as a germicide there.

2. Brocq: of Paris recommends yeast for oil etc.

Dose a teaspoonful of fresh brewer's yeast 3 times a day in water at the beginning of a meal. It is not unpleasant to take, having the taste and odour of ale, and produces no disquieting symptoms. It can be kept in a cool place for at least 2 or 3 days before spoiling.

3. Ceridin pill : Dose one to three, thrice a day.
4. Sulphuric acid (Dil.) m xx. thrice a day, is said to be efficacious (*British Med Journal 15th August 1908*).
5. *Boils*.—A cure for boils which rarely fails to give prompt relief is one and a half drams of sodium chlorate in four ounces of water, a teaspoonful to be taken every three hours. If a boil is just starting this treatment will usually abort it and prevent any others from appearing—*Medical Standard*.

Dietetic treatment.

The presence of an excess of uric acid in the organism is believed to be one of the determining factors in the production of furunculosis, and in view of the fact that animal albuminoids contain a much larger proportion of nuclein, which is the principal source of uric acid in the economy, than albuminoids of vegetable origin. The *regimen* Dr. Guinsbourg, of Kharkow recommends is not rigidly vegetarian since he allows eggs and milk in addition to vegetables and fruits, with occasionally some lean fish in order to impart variety to the dietary. Avoid stimulants.

Anthrax.

This is a fatal epidemic specific septicæmia caused by the *bacillus anthracis*. It is prevalent amongst herbivora.

Anthrax in man is always the result of inoculation through a wound or inoculation of the skin, and is always derived from the anthrax of domesticated animals *e.g.* horses, cattle, sheep and goats. Anthrax is the only disease in which skin, hair and wool are capable of transmitting the infection to man.

It is frequent among tanners, saddlers, shoemakers etc.

Treatment—Before Sclavo published the results of his trials of serum-therapy, the treatment usually recommended in cases of external anthrax was excision of the necrotic patch and of the infiltrated tissues around, followed by the application of pure carbolic acid or the actual cautery. Since 1899 several cases have been treated successfully in Italy with serum alone, and during the last few years this method of treatment has been carried out in England, combined with excision or alone. Since 1905 nine cases of cutaneous anthrax were treated in the General Infirmary, Dewsbury: in four cases the pustule was excised and serum was injected; one case was treated with serum, and three with injection

The organism has two ways of resisting invasion by micro-organism,—

1. By the specific action of the blood-serum, which may be natural or acquired.
2. By phagocytosis

The blood has no bactericidal, bacteriolytic or agglutinating power on the strepto: straphylo: and pneumococci, and while it has some agglutinating power on tubercle bacilli, it has no bactericidal or bacteriolytic power upon them. The organism therefore must depend almost entirely upon phagocytosis for its defence against the above bacilli.

It is a well-known fact that we all have within us an inherent power, called immunity, that resists disease. The better the blood, the greater is the immunity. It has been stated that the fasting person cannot catch disease, because, his blood has a higher resisting power. In furunculosis, erysipelas, subcutaneous injection of *leucocyte extract* from 5 to 20 c. c gives brilliant result (*American Journal Med- Science April 1909*)

Dr. Corner in the *clinical Journal June 15th, 1910* recommends rest, hot dressing, passive congestion and an incision in all septic cases, and gives an unfavourable opinion regarding vaccine treatment

It has been well said that auto-intoxication is just as truly a surgical subject and belongs to this realm as much as it does to internal medicine. The sudden suppression of the sweat is likely to force these "normal" toxic materials back upon the blood, and the stress of their elimination must then necessarily fall upon other eliminatory organs with such possible or probable results as nephritis pneumonia and other excretory inflammations.

(*Twentieth Century Practice of Medicine Vol. xv. page 628.*)

The fountain head of energy for all the functions lies in the nerve centres, and by controlling emanations from this source of power, the vital forces will be propagated, with regularity and uniformity, to all the remote parts of the physical organization.

ERYSIPELAS.

Erysipelas is an acute inflammation of the epidermis due to the presence of one of the organisms of the streptococcus class, of which the *S. pyogenes* is the most frequent example; hence erysipelas is not in the true sense of the term, a specific disease, since it may be produced by a variety of organisms and these organisms are capable of producing other diseases in other parts of the body.

There are two types of erysipelas, traumatic and idiopathic

It has been suggested that persons with chronic coryza and a tendency for fissures to form about the nostrils and lips, affording a point of entrance to the micro-organism, are particularly prone to erysipelas.

(*Nothnagel's Encyclopædia of Practical Medicine, Erysipelas*).

Classical symptoms are:—

1. Rigor followed by a rise of temperature.
2. Local abrasion if any, becomes hyperæmic. The neighbouring skin is, hot, smooth, tense, and œdematous. The superficial layers of epidermis may be lifted as small blebs.
3. Cervical lymph-glands are swollen.
4. The temperature keeps high without marked remissions for four or five days and then defervescence takes place by crisis.

For practical purposes the treatment is divided as :—

- i Medicinal.
- ii Dietetic
- iii Hygienic.

i Medicinal treatment :—

The physician should bear in mind the following points :—

- (a) To keep up the strength of the patient by stimulants and nourishing diet
- (b) To subdue symptoms by antiseptics, tonics &c.
- (c) To neutralise the toxin by subcutaneous injection of polyvalent serum
- (d) To dress the part locally with some of the time-honoured remedies :

Internally.—

Writer's favourite formulæ.

℞

Quinine hydrochlor	gr. ii
Pot . chloras	gr v
Tinc. . ferri perchloride	m. xv
Glycerine	m. x
Aq . Chloroformi	ad. ʒj

mft. for dose : sig : one every 4 hours

2. Vini : gallici two ounces in 24 hours

3. ℞

Camphor	
Acid benzoic.	āā gr. i

mft. for a pulv : to be given in capsules and taken every two hours.

4. Ecthol is “ the ideal corrector ” of depraved conditions of fluids and tissues, anti-purulent, anti-suppurative and anti-morbific in the internal and external treatment of septic and infective processes. Dose one teaspoonful four times a day.

Locally.—

1. Ecthol is a valuable application over erysipelas, etc.

2. Tucker in the *Therapeutic Gaz*: June 15, 1908 recommends compress of saturated sol of mag sulph · oiled silk is spread over the dressing. The dressing should not be removed oftener than every twelve hours, and the infected area should not be washed while this treatment is being carried out.

Relief is often experienced within 24 hours and the symptoms subside within 3 days .

3. Carbolic collodion painting as recommended in *Munich med woch.* March 10th, 1908, is efficacious

R

Acid carbolic	6 parts
Collodion	100 parts.

mft. to be painted on the affected parts and for about two fingers' breadth beyond.

4. Dr. Lucien C. Davis M. D (*Monthly cyclopædia and Medical Bulletin May 1909*) recommends.

R

Acid carbolic	3 parts
Spt. camphoræ	6 parts
Alcohol	1 part

It readily penetrates the entire skin, destroys the infection promptly, and leaves no scars, nor causes any pain

The camphor prevents the burning effect of the acid and counteracts any that may be absorbed into the system. The alcohol does the something This sol: must be freely applied with a cotton sponge to the infected area, and fully an inch beyond the line of demarkation.

The application varies from one to three within 24 hours.

N.B.—The very first application causes an intense reddening of both the healthy and diseased skin, but this

is not to be feared. If the skin is uncomfortably hot or dry cover the infected area with gauze wrung out of cold sterile salt solution.

Writer's favourite formulæ .—

(a) R̄

Tinc. : ferri perchloride	ʒ i i
Glycerine	ʒ v
Liq : hydrarg perchloride	ʒ j

mft. Paint the part with a pencil of cotton locally.

(b) R̄

Ichthylol.	ʒ iv
Glycerine	ʒ iv

mft apply it thick over the swollen part.

The Serum treatment of erysipelas :—

Anti-streptococcus serum is in its infancy Dr. Maissen considers that large doses upto 100 c.c. are to be injected to get the desired benefit.

A. D. Dryfoos, M, D., of New York, writes in *Merck's Archives* for November, 1908 : " There is no doubt that the only rational therapy of septic infections consists in the use of antitoxic serum. The failures show that, aside from the question of difference in virulence of various strains of cocci, there are several distinct species, each one capable of combining only with the specific antitoxin. The objects have been met, in part at least, by the production of so called polyvalent sera. Quite a number of cures have been reported with such sera. The following case is of interest, as it tends to substantiate their value in streptococcus infections.

" The patient first complained of rigidity and tenderness of the muscles of the neck. On examination it was found that the lymphatic glands were enlarged and tender. Within twenty-four hours the swelling and tenderness increased markedly on the right side at the angle of the jaw. There was now great pain and difficulty in swallowing. At the end

of another twenty four hours these symptoms had increased until the patient presented a septic appearance with a high remittent temperature. A diagnosis of deep-seated cellulitis of the neck was made. On incision a few drops of pus were obtained, but no abscess cavity was discovered. Later the characteristic erysipelas rash appeared at the margin of the wound and extended over the right side of the face. It was decided to check the process with an injection of antitoxin, and antistreptococcus Serum of Parke, Davis & Co's manufacture was employed. Immediately there was a fall of temperature. A second injection was made and the patient made a rapid recovery."

N.B.—Tyrrell Gray (*Lancet August 1st, 1908*.) considers local applications of secondary importance and uses by preference *Metchnikoff's serum* combined with internal administration of quinine and stimulants.

The injections should be given until the temperature falls.

Local measures are confined to dusting the parts with a powder consisting of equal parts of Calomel, Zinc oxide and starch.

Treat the patient symptomatically.—

1. *Hyper-pyrexia*.—

(a) Ice over head, put plenty of ice bits and common salt into an ice-bag and squeeze out the air before the application of screw cork; first place an oiled silk evenly over head, secondly apply ice bag over the oiled silk, the object being to have the advantage of cold without water.

There is a formation of dewes over the outer surface of the ice-bag which may wet the head constantly.

(b) Tepid sponging with aromatic vinegar.

N.B.—The writer is against the use of antipyretics of coal tar series (phenacetin, antipyrin) to subdue high temperature.

2 *Insomnia* :—

Bromidia acts admirably well.

ii Dietetic treatment.

- 1 Hot milk every now and then.
2. Panopepton, palatable peptone.
3. Soups, chicken broth.

iii. Hygienic treatment.

Isolation should be strictly carried out. A practitioner in attendance upon a case of erysipelas should not attend cases of confinement.

The room should be well ventilated and well bathed with sun light.

LEPROSY.

It is now admitted on all hands that leprosy is caused by a bacillus, that it is contagious especially during its ulcerative stage and is inoculable, that it is diffused by hereditary transmission and that the home of the disease in India so to speak embraces that part of dry laterite tract of Bengal encircling Birbhoom, Bankura, Midnapore and Orissa coast.

Mixture of Sawtali and Bengali blood, poverty of food e.g. coarse rice, little vegetable and scanty fishes and blood degeneration caused by syphilis are the predisposing causes of this fell disease.

Annually hoards of the victims are swept away from this land of mortals. Are not myriads fallen as prey under the clutch of this hideous malady and why? It is the negligence on the part of our educated selves to turn a deaf ear to the gravity of the evils of leprosy.

In Bengal the practice of segregation is very meagre; the number of leper asylums can be counted on finger's end. In a

town like Calcutta one will find on a fine afternoon numerous lepers begging by the street without a human soul raising a voice for their depraved degenerated and deplorable condition. The danger is two fold ; during ulcerative stages the lepers are living propagators of the contagion and thereby may infect the public. Do not their loathsome disease with lifelong suffering and inability to do the work, appeal to human sympathy ? In the day of Victorian era when we call ourselves civilised, there is a reciprocal degeneration in the moral aspect of our lives———a dying race according to the version of one of the writers of the day Let a philanthropist come forward and raise subscriptions from the rich and the poor alike for erecting several suitable asylums for our poor brethren, a condition in which you and I, may be the victim at any moment by the Providential will. Boycott the disease as far as practicable from the community by proper segregation and isolation, and stamp his name in the annals of Indian history as a philanthropist who has tried to do one of the duties of life.

“Labour conquers all things” says the proverb : so long as the laws of nature require that mankind shall work, man shall “earn his bread by the sweat of his brow,” the necessity of doing good work is of the first importance.

There were three types of leprosy *viz* :—

- (1) Anæsthetic.
- (2) Nodular.
- (3) Mixed.

For clinical purpose the treatment of leprosy is divided into 2 groups :—prophylactic and palliative.

1 Prophylaxis:—

1. Isolation.
2. Occlusive dressing to the cutaneous and mucous membrane wounds.

3. Disinfection of excreta, linen clothing, all soiled objects and infected habitation.

4. Avoid dry salted fish.

Prof. J. Hutchinson's fish theory has some truth in it.

5. Lepers should not engage in the sale of food, or in such occupation as those of barbers and washer-women

Morrow in his article on Leprosy in "*The Twentieth Century Practice of Medicine*" writes that a very large majority are of *de novo* origin.

II Palliative.

A. Medicinal

B. Hygienic

C. Dietetic

A Medicinal treatment :—

Externally —

1. Apply slaked mud paste over the affected part and expose it to the sun for half an hour, then wash it with coal tar or 20% Carbolic Soap, subsequently rub any of the following :—

Writer's favourite combination :—

R.

(a)	Acid Salicylic	gr. xv
	Ichthyol	3 ss
	Hydrarg oleatis (10 per cent.)	3 ss
	Zinc : oleatis	3 ss
	"Neem" oil	ad. 3 i

(b) "Chaulmoogra" oil.

(c) "Gurjun" oil.

(d) *Unna Specific Ointment*

℞

Ichthyol	5 per cent.
Salicylic Acid	2 per cent
Pyrogallol	5 per cent.

N.B.—Toxic effects are counteracted by the administration of dilute hydrochloric acid.

- 2 Dr : Thin in *British Med Journal May 1901* recommends 5 per cent. Pyrogallic acid ointment to be applied to the affected parts.
3. Prof. Muller in the *Therapist* 1899 recommends external application of Chinosol
4. V. G Heiser recommends the application of the x rays
- 5 Dr. Besnier regards a long course of Electrogalvanic cauterization as a certain means of reducing leprous nodules

Internally :—

- 1, During inflammatory stage the combination of antimony and arsenic answers well.

℞

Sodii arseniatis :	gr. ʒi
Jame's powder :	gr. ii

mft. for a pulv : sig. one thrice a day after meal

2. If there be a history of syphilis, arsenic Iodide is best.
- 3 Give chaulmoogra oil m. v-x in capsule ; or pour it over warm milk : aftertaste is removed by sucking lemon ; stop the medicine if there be symptoms of gastric irritation.

Dr. Kupffer advocates the use of antileprol, a purified form of Chaulmoogra oil. Dr. Engel Bey in a lecture recently delivered before the Society of International Medicine, at Cairo, gives particulars regarding the use of this preparation. Antileprol does not cause gastric disturbances, the usual

dose being 7, 12 or 15 grs : to be given preferably in capsules thrice a day after meal. If given in liquid form it may be added to a flavouring infusion, or taken with hot milk

4 "Gurjan" oil

5 Strychnine Sulph gr $\frac{1}{16}$ tabloid thrice a day when there is nervous prostration.

N. B.—Dyer in *Medical News July 1905* expresses his opinion about the curability of the disease and advocates the undermentioned plan of treatment :—

(a) Baths twice a day with or without soda.

(b) Strychnine essential

(c) "Chaulmoogra" oil three drops thrice a day to be increased up to two drachms.

(d) Treatment must be pursued for six months

Tuberculine treatment is under trial :—

Treatment of leprosy by Nastin :—

Nastin is a fatty substance extracted from cultures of *Streptothrix leproides* by Drs Deycke and Bey. It appears that injections of Nastin, in combination with Benzoyl Chloride (2 per cent solution), arrest the disease, and in some cases effect a cure. The Benzoyl Chloride acts as a solvent for the Nastin, the latter attaches itself to the bacilli, and the combination kills the bacilli, by depriving them of their fatty contents, thus leaving them an easy prey to the tissue elements of the body.

The lecture is printed *in extenso* in the *British Med. Journal of April 4th 1908*. Hence we come to the conclusion that Benzoyl Nastin is an agent which directly acts on lepra bacilli : benzoyl removes the fat of the bacilli, while Nastin attaches itself to the lepra bacilli

Captain William has tried nastin in leprosy, the result of which appears in *Indian Medical Gazette November 1909*.

{ Nastin Bo
 { Nastin B 1
 { Nastin B 2

Case	Bo	B1	B2	time.
Anæsthetic	3	41	22	18th June 1908 to 31st July 1909
Tubercular and Anæsthetic	0	54	11	Do.
Anæsthetic	6	... 45	50	Do.
Anæsthetic	37	.. 13	0	24th Dec. 1908 to 31st July 1909
Tubercular.	0	.. 25	5	19th Jan. 1909 to 31st July „
Do.	0	26	17	30th Jan. „ to 31st July „
Do	0	32	0	31st Jan. „ to 31st July „
Do	0	29	.. 3	6th March „ to 31st July „
Do.	0	... 39	.. 8	3rd March „ to 31st July „
Do.	0	... 8	.. 0	16th March „ to 29th April „
Do	0	17	· 2	7th April „ to 31st July „

The conclusions are :—

1. General health much improved in most of the cases.
2. Lepromata and ulcers have steadily improved
3. Anæsthesias have shown marked improvement.
4. *Microscopic changes*—a very definite change has taken place in the bacilli.
5. *General remarks*—results are encouraging.

Rost's Serum treatment

Leprolin " is derived from a toxin of the *Bacillus lepræ* :
Dose 10 c. c. to be injected into the muscles of the buttocks.

It is contra-indicated where pulmonary or kidney complications are present

(*A system of medicine, Osler and Mc Crae, Vol iii, p 136*)

Hot alkaline bath is good

Hygienic treatment :—

Remove the patient from endemic locality, avoid damp stagnant air, absolute rest in bed, gentle walk morning and evening if possible, proper clothes, and hot bath are indispensable. Warm ink bath made by the action of tannin on sulphate of Iron, acts on the fatty body

Prof J. Hutchinson remarks that a glance of "leprosy globe" will at once reveal that leprosy is chiefly prevalent on the seacoast on islands or in river valley viz. Scandanavia. Iceland, Lapland, China, India, West Indies etc., and that the chief food consists of badly-cured fish (dry salted fish) eaten without being sufficiently cooked

Dietetic treatment :—

Generous diet is absolutely necessary milk to be given in abundance, codliver oil is good.

International Conference on Leprosy.

The second International Scientific Conference on Leprosy which was held at Bergent in August 1909 confirms in every respect the resolutions adopted by the first International Conference of Berlin 1897.

- I Leprosy is a disease which is contagious from person to person whatever may be the method by which this contagion is effected. Every country, in whatever latitude it is situated, is within the range of possible infection by leprosy, and may, therefore, usefully undertake measures to protect itself.

- II In view of the success obtained in Germany, Iceland, Norway and Sweden, it is desirable that other countries with leprosy should proceed to isolate their lepers
- III It is desirable that lepers should not be permitted to follow certain occupations which are particularly dangerous in respect to the contagion of leprosy. In every country and in all cases the strict isolation of leprosy-beggars and vagrants is necessary
- IV It is desirable that the healthy children of lepers should be separated from their leprous parents as soon as possible, and that these children should remain under observation
- V An examination should be made from time to time of those who have lived with lepers by a competent physician
- VI. All theories on the etiology and the mode of propagation of leprosy should be carefully examined to ascertain if they accord with our knowledge of the nature and the biology of the bacillus of leprosy. It is desirable that the question of the transmissibility of leprosy by insects should be elucidated, and that the possibility of the existence of leproid diseases among animal (rats) should receive early study
- VII. The clinical study of leprosy induces that it is not incurable. We do not at present possess a certain remedy. It is desirable, therefore, to continue the search for a specific remedy.

The statement sets forth that the British and colonial delegates unanimously approved the resolutions of the conference and agreed to the following additional resolutions:—

1. Leprosy is spread by direct and indirect contagion from persons suffering from the disease. The possibility that indirect contagion may be effected by fleas, bugs, lice, the itch parasite, etc, has to be borne in mind. Leprosy is most prevalent under conditions of personal and domestic uncleanness and overcrowding, especially where there is close and protracted association between the leprous and non-leprous.
 2. Leprosy is not due to the eating of any particular food such as fish.
 3. There is no evidence that leprosy is hereditary, the occurrence of several cases in a single family is due to contagion.
 4. In leprosy an interval of years may lapse between infections and the first recognized appearance of disease. It is a disease of long duration, though some of its symptoms may be quiescent for a considerable period and then recur.
 5. The danger of infection from leprous person is greater when there is discharge from mucous membranes or from ulcerated surfaces.
 6. Compulsory notification of every case of leprosy should be enforced.
 7. The most important administrative measure is to separate the leprous from the non-leprous by segregation in settlements or asylums.
 8. In settlements home life may be permitted under regulation by the responsible authorities.
 9. The preceding recommendations, if carried out, will provide the most efficient means of mitigating the leper's suffering and of assisting in his recovery and at the same time will produce a reduction and ultimate extinction of the disease.
-

ACTINOMYCOSIS.

Actinomycosis or the *ray fungus* is chiefly a disease of oxen, horses and swine, but affects man to a less degree.

The *parasite* belongs probably to the *cladothrix* group of bacteria.

“Madura foot” is caused by *discomyces maduræ*

Clinical forms—

1. *Alimentary* :—

Jaw has been involved in a number of cases in man : the patient comes under observation with a swelling on one side of the face, or with a chronic enlargement of the Jaw which may stimulate sarcoma.

2 *Pulmonary* :—

Cough, fever, wasting, muco-purulent foetid expectoration and unilateral affection are important signs.

3 *Cutaneous* . -

“Madura foot,” “Vincent’s white mycetoma”

Treatment :

Potassium Iodide gr xx-xxx a day well diluted with water acts marvellously in some cases. At the end of six months suppuration ceases and the fistulous tract of the Jaw completely cured. (*Therap, Monats January 1909*)

SCARLET FEVER.

Scarlet Fever is an infectious disease characterised by a diffuse exanthem and an angina of variable intensity

The specific germ of the disease is still unknown.

We know at present that a scarlet fever strepto-coccus *can* produce erysipelas but *usually* it can only cause scarlet fever.

The disease except imported cases is very rare in India.

The classical symptoms are :—

1. Fever with scarlet coloured rash.
2. Strawberry tongue.
3. Sore throat.
4. Desquamation.
5. Nephritis : (Albumen in Urine, casts)
- 6 Pericarditis and endocarditis.

Varieties —

In toxic cases Dr. Gordon discusses the use of serum, which should be polyvalent, sterile, and not more than six months old. From 50 to 100 c.c. should be given, and he has never seen any harm.

In septic, as distinguished from toxic cases, streptococcus serum should be avoided. Alcohol in Dr. Gordon's experience is usually both unnecessary and harmful in septic cases.

Treatment.

i. Early stage of the disease.

Rx

Liq : ammon citratis	3 i
Spt. Ammon aromatic.	mv
Sodii : citras	gr. i
Sodii : chloras	gr. i
Aq : Camphræ	ad 3 ss

mft. for a dose sig one thrice a day for a child of 8 years old.

ii. Desquamative stage :—

- (a) Carbulated vaseline is recommended for local application.
- (b) Occasional warm bath may be given.

Throat complication :—

1. Dr. Gordon in the *Practitioner January* 1909 recommends a douche of warm water which has been rendered faintly alkaline with sodium bicarbonate in order to diminish absorption of the toxins from the fauces. The object of this procedure is flushing and not disinfection. The patient should lie on his stomach with the head projecting over the edge of the bed, the forehead supported by one hand of the nurse. At least two pints should be used for each irrigation.

2. Spray of hydrogen peroxide is recommended.

Nose complication :—

Swab the nostrils with cotton pencils moistened with alkathymol or glycothymolin lotions

Ear complication :

1. *In acute stage.*

R

Tinc opii

Glycerine

aa 3i

mft. Pain is relieved by instillations of the above twice or thrice a day

2. After the discharge is established careful cleansing of the external meatus with a cotton swab, followed by the instillation of a saturated solution of boric acid in 20-50 per cent alcohol, is considered better practice by aurists than irrigations, because of the tendency of the latter to drive the infection deeper into the ear.—Miller.

iii. Stage of convalescence

A bitter tonic is recommended by Prof: Osler.

Dietetic treatment —

Milk diet is a preventive of nephritis.

Fresh fruits are allowed. Water should be freely given.

Hygienic treatment—

The patient should be in a well ventilated upper-storied room : avoid drafts :

DENGUE FEVER.

Dengue is an acute infectious tropical disease characterised by fever, pains in the joints and muscles and sometimes a cutaneous rash and is caused by a micrococcus as advocated by Mc. Laughlin of Texas.

Classical symptoms —

1. High fever.
2. Intense aching pains in the joints and muscles, hence the popular name " break-bone fever."
3. Erythematous rash
4. Enlargement of lymph-glands.

Treatment ;—

Prophylactic —

Quinine in small doses is good.

Medicinal :—

Antipyrin gr. v, thrice a day hydrotherapy to reduce the fever ; Potassium iodide gr. iii thrice a day during convalescence.

RELAPSING FEVER.

Relapsing fever is a specific infectious disease caused by *spirochæta obermeieri* associated with overcrowding, destitution or famine in warm or temperate climates usually epidemic. characterised by a definite febrile paroxysm which usually lasts six days and is followed by a remission of about the

same length of time, then by a second paroxysm, which may be repeated three or even four times, whence the name relapsing fever.

Treatment :—

The disease should be treated like any other continued fever by careful nursing, a regular diet and ordinary hygienic measures.

Treatment during an early stage of the disease.

R

Liq : ammon citratis	ʒii
Sodii ciatrs	gr. 11
Sodi chloras	gr. 11
Aq. Camphoræ	ad ʒ i

mft. for a dose : sig. one every three hours

Treatment during crisis.

R

Spt. ammon aromatic	m. xx
Tinc. musk	m. xx
Inf : Digitalis	ʒ i
Aq : chloroformi	ad ʒ i

mft. for a dose : sig. one every two hours.

YELLOW FEVER.

Yellow fever is an acute febrile disease of the tropics characterised by Jaundice and hæmorrhage and due to a specific virus the nature of which is not yet known.

Treatment ;—

Sternberg advises the following :—

R

Sodii Bicarbonate	grs. 150
Hydrarg. bichloride	gr. ʒ.
Aqua pura	quart one.

mft. three table-spoonfuls to be given every hour, the object is to destroy the specific germ locating in the intestine by this antacid antiseptic mixture.

MALTA FEVER.

Malta fever is caused by *micrococcus melitensis*

Zammit remarks that goats are naturally infected with M : melitensis , and their milk plays an important part in the *role* of the disease.

Classical symptoms ;—

- 1 Repeated alternation of pyrexial attacks with periods of normal temperature. The onset may be acute with rigors, severe headache, pain etc ; history of gradual rise of evening temperature with morning remissions.
2. Constipation.
3. Lumbar and sciatic pains.
4. Copious sweating
5. Swellings of Joints, bursæ and of the sheaths of tendons , orchitis etc.

N. B.—Agglutination of *micrococcus melitensis* by a serum diluted 20 times, is regarded as diagnostic of malta fever

Treatment :—

Prophylactic —

1. Goat's milk should be boiled before use.
2. Infected goats should be destroyed.

Medicinal :—

Internally :—

(i) R

Spt. Ether nitrosi	3 ss
Aq. camphoræ	ad 3 i

mft. for a dose : sig. one every three hours.

- (ii) Strychnine and alcohol may be of the greatest service in tiding over the dangerous depression.

Locally :—

- (i) Lint iodine to paint :
- (ii) Blister :

GLANDERS.

This is a highly infectious specific disease affecting chiefly horses and asses, sometimes other domestic animals and occasionally transmitted to man by accidental inoculation.

The disease is caused by a specific germ *bacillus mallei*.

Classical symptoms :—

1. Fever.
2. The infected area becomes swollen and hyperæmic.
3. Lymphangitis.
4. The nodules break down rapidly to ulcers and there is a mucopurulent discharge : there is also running from the nose.
5. An eruption of papules, which rapidly become pustules, breaks out over the face and about the joints.

N. B.—It may be mistaken for variola.

Treatment .—

Remove the wound by knife or destroy it by caustic followed by antiseptic dressing.

HYDROPHOBIA, (*Rabies*)

Hydrophobia is an acute disease of animals especially of the canines, dependent upon a specific virus, and communicated by inoculation to man.

Classical symptoms are :—

i. *Premontory stage.*

The patient is depressed and melancholic ; irritation about the bite is a common complaint.

ii. Stage of excitement.—

Excitability, restlessness and hyperæsthesia are characteristic symptoms ; any afferent stimulus will cause a reflex spasm.

Any attempt to drink water is followed by an intensely painful spasm of the muscles of the larynx. It is this which makes the patient dread the very sight of water and gives the name *hydrophobia* to the disease. Temperature ranges from 100° to 103° F.

This stage lasts from a day and a half to three days.

iii. Paralytic stage—

Patient gradually becomes unconscious and dies from heart failure within six to eighteen hours.

Prophylactic Treatment .

Systematic muzzling of dogs as practiced in Singapore is highly scientific and it is a matter of regret why any such measures are not adopted in India where street dogs run mad from time to time ?

Medical treatment :

The bite should be thoroughly washed antiseptically and cauterized with pure carbolic acid

To allay spasm, chloroform may be administered and morphia given hypodermically.

Local application of cocaine solution to the throat does some good.

Inoculation treatment after Pasteur Institute as practised in Kasauli (Simla district) is strongly recommended.

Diseases of the perverted Metabolism.

CHAPTER III.

GOUT.*

Gout is a disease of malassimilation characterised *pathologically* by the abnormal formation of uric acid, and *clinically* by arthritis of small joints and by the gradual deposition of urate of soda in and around the joints.

Prof : Huchard rightly remarks :—

“Gout is to the arteries what rheumatism is to the heart.”

The Pathogenesis of Gout.

1. Bryce (*British Medical Journal*, October 31, 1908) thinks the pathology of gout may have a renal origin, or a metabolic origin, although in all cases there is a deficient purin metabolism, the purin being in excess in the gouty man's blood.

2. Dieulafoy believes that urinary and hepatic lithiasis are co-related as to their etiology, and shows that hepatic disturbances are common in persons of a gouty habit.

3. C. Wynn Wirgmann suggests a microbic origin and Ringrose Gore is a strong believer in the theory that gout is due to a bacterial toxin formed in the tissues. This seems plausible since the administration for a few days of such lactic ferments as fermentolactyl, diminishes intestinal autointoxication. W. H. Porter, of the *Post-Graduate Medical School of*

* S. A. Any (*wien, klin wochenschr*, 1910 No. 11) assumes a toxin as the cause of the disease, which may be either of exogenic (alimentary) or of endogenic origin. In exogenic gout the diet alone is therapeutically of importance.

New York Archives of Diagnosis ; April, 1908, states that indoxyl potassium sulphate or indican in the urine positively indicates that "there is fermentation of the proteid constituents either in the intrinsic structures of the body or in their passage through the alimentary canal.

4. H. Kionka, of Jena (*Revue de Pharmacologie Medicale, Paris, July, 1909 p. 9*) remarks that Glycocoll plays an important role in gout. Gouty persons eliminate glycocoll, while in normal urines there are but traces of this substance. Gouty persons carry glycocoll in their body fluids, which diminishes the solubility of uric acid and thus favours the deposit of urates in the tissues. In health glycocoll is destroyed and transformed into urea or a similar body as the result of the action of a ferment existing in the liver known as the urea-forming ferment.

Hence you will find : —

- (i) glycocoll in the urine.
- (ii) uric acid in the blood
- (iii) urates in the tissues.

5. "Professors Falkenstein, Hutchinson, Minkowski, and other authorities are of the opinion that the dyspepsia which precedes or accompanies an attack of gout is caused from retention of autotoxines which originate from impaired function of the stomach by alteration of the glands near the pylorus, which secrete hydrochloric acid (*Cycl. Pract. Medi., April, 1906.*)

6. According to V.C. Vaughan, of Ann Arbor (*Journal of the A.M. Ass., Nov. 27, 1909*), neither urea or uric acid are important constituents of the urine as far as their toxicity is concerned.

Increased amounts of uric acid in the blood of the gouty may be due to increased production, retention, abnormal transformation or combinations of these, all of which cannot yet be positively demonstrated to our satisfaction.

An increase of endogenous uric acid in the blood is not diagnostic of gout, for this occurs in three conditions,

- (i) fever (pneumonia).
- (ii) exposure to cold.
- (iii) after severe exertion, (*Quarterly Journal of Medicine July, 1908*).

7. A new theory of the origin of uric acid is discussed by Trautner in the *Ugeskrift for Læger. Copenhagen. Sept. 23, 1909*. This investigator claims that uric acid is caused by proliferation of the colon bacillus which brings about a constant colitis.

8. Local causes :—

- i. Fagge says traum brings about gouty attacks.
- ii. Freundweiler considers it a local inflammatory process.
- iii. Scudmore believes it due to plethora.
- iv. Gairnir calls it venous stasis.

The real cause of gout, however, must still be considered obscure, for while we have known factors (viz. : increase of uric acid in the blood) other unknown factors still demand diligent work to clear up.

Gout is of two kinds—

Acute and Chronic.

The treatment is grouped under four heads :—

- I, Hygienic.
- II. Dietetic.
- III. Bath.
- IV. Medicinal.

1 Hygienic.

An open air life with plenty of exercise at regular hour is indispensable. Walking and exercise by means of light dumb-bells are best.

Violent exertion brings an attack of gout, because overwork of the joints leads to excess of synovial fluid which like lymph, contains a large amount of carbonate of sodium and hence precipitates the urates as biurate which is so long held in solution in the blood, as quadriurate.

On the other hand systematic exercise is said to be curative for gout. (*The Clinical Journal*, October 20, 1909, page 21)

Patient should wear flannel next to the skin to avoid draught and to keep skin active.

A dry bracing climate of laterite soil like Madupore, Simultalla, Gridhe, Hazuribagh, &c. infuses new vigor to the system, he should avoid sea-side and damp climates.

2. Dietetic.

The patient is the best physician of his ownself. He should avoid those foods *e. g.* meat and sugar, which his experience has taught him to be apt to produce gastrointestinal fermentation.

When the attack occurs, the patient should be placed at once upon **water-diet** for 24 hours—3 to 3½ pints being given. This is the best way to deal with the intestinal fermentation. After the day's water-diet, the patient is given **milk-diet** (with some lactic ferment such as fermentlactyl tablets of 30 centigrams), and this is kept up so long as any inflammation continues.

Moderation should be his keynote. A list of "purin-free" diet and drink is mentioned below : —

1. Fresh milk, soured milk, buttermilk or whey.
2. Plasmon : 'chana.'
3. Egg—boiled, poached or raw.

It is declared by Walker Hall to be purin free.

4. White bread.
5. Butter, cheese.

6. Macaroni, rice, tapioca and vermicelli.
7. Fresh ripe fruits and all cooked fruits
8. All green vegetables .

Salts of certain vegetables *e. g.* spinach have specially solvent powers on crystals of biurate of sodium.

9. Cereals of all kinds *e. g.* oatmeal :
10. Pure hot water, mineral water :

After a month or so of this diet :

Prescribe :—

1. Brown bread :
2. Beans, peas.
3. Nuts of all kinds.
4. Fishes.
5. Games : *e. g.* chickens.

Lecturing on gout at the Hospital Beaujou, Prof. A. Robin says that young and white meats, viscera, eggs, etc., are rich in nucleins which decompose into purin bodies. Consequently, the gouty subject ought to restrict himself to the consumption of red meat, beef and mutton, and leave out entirely from his dietary all white meat and all internal organs.

Avoid :—Sugar, salt, tea, coffee, potatoes, wines, all fermented liquors, malt, toddy, alcoholic drinks, spice, rich highly-seasoned dishes, fatty meat, strong soup, tomatoes, vinegar, and all sauces.

Limon Juices is allowed in moderation.

Dr. H.G. Sutton remarks :—

“Give your gouty patients a little wine.”

Sir A. Garrod has shown the utility of a vegetable diet as a source of hippuric and benzoic acids which act as solvents of uric acid compounds.

“The use of sugar has been greatly decried, but here again there is no evidence that it is directly injurious ”

"The question of beverages is one of the most important matters for consideration in this connection. It is one of the oldest observations that water-drinkers seldom suffer from gout. The passage of water through the tissues promotes interstitial oxidation, and assists in the removal of refuse matters that are delayed on their way to the kidneys."

(*Twentieth Century Practice of Medicine. Vol. ii, page 476*).

Ebstein urges strongly the use of fat in the form of good fresh butter from 2½ ounces a day.

Roberts advises gouty patients to restrict as far as practicable the use of common salt with the meal, since the sodium-biurate very readily crystallizes out in tissues with a high percentage of sodium salts.

Sir W. Robert's table shows at a glance the average percentages of albuminous substances contained in different articles of food.

Animal food.	Albuminoid matter.	Vegetable food.	Albuminoid matter.
Butcher's meat	.. 19 per cent	Bread	.. 8 per cent
Fowl	.. 20 "	Oatmeal	... 12 "
Game	. 22 "	Rice	.. 6 "
Fish	... 17 "	Green peas	.. 6 "
Eggs	.. 13 "	Potatoes	... 2 "
Milk	. 4 "	Carrots, turnips	1 to 2 "
Cheese	.. 30 "	Green vegetable	1 to 2 "
		Fresh fruit (excluding nuts)	0.5 to 1 "

3. Baths.

Bath in mineral Springs for the gouty is highly beneficial. Sea bath is also good. A handful of Tidman's sea salt in a tub of warm water forms artificial sea water which is recommended for the patient. Bathe for 15 minutes and massage your body well.

Vapour bath if employed early will frequently abort an attack. Heat dilates the peripheral vessels, lowers blood pressure, causes diaphoresis and thereby eliminates waste products and relieves pain.

Electric light bath is scientific.

Dr. A. P. Luff M. D. remarks : -

"The radiant heat produces very rapid and free diaphoresis, stimulates the skin, and improves metabolism, so that the patient feels refreshed instead of exhausted after such a bath. For the entire body electric light bath with a temperature of 170° F. is well borne."

4. Medicinal.

There are two forms of gout—

A. Acute.

B. Chronic.

A. Acute.—

Internally :—

The aim of treatment should be :—

(i) To promote the elimination of uric acid by

(a) Saline purgatives, mineral water, *e. g.* Mag : Sulph 2 dr in a glass of tepid water early in the morning on an empty stomach, it should be taken by sips.

(b) Diuretic :

(c) Diaphoretic :

Sir William Robert's prescription :—

Pot. Bicarbonate 3 ss. in a tumbler of water at bed time to stem the nightly acid tide :

(ii) To prevent the formation of excessive amounts of uric acid.

Dr : Robin recommends :—

(a) Quinoformine (a combination of quinic acid with formine or urotropin) Daily dose 30-60 grains : it is easily taken in water and does not irritate the stomach :

(b) Sidonal (quierate of piperazine) Daily dose 30-45 grains.

(iii) Solvents of Uric acid.

The following is the writer's favourite combination :

i. R

Vin. colchici	m. x
Tinc. Guaiaci Ammoniata	m. xv.
Pot. citras	gr. x.
Lithii Citras	gr. iii
Liq. Pot arsenias	m. i
Aq. Distil	ad ʒi

mft. for a dose : sig. one thrice a day.

Lauder Brunton recommends Colchicum and Arsenic, while according to Garrod guaiacum is a specific to the disease.

The recent studies of Dixon & Malden (*Jour. Chem. Soc. June, 1908*) throw new light on the physiological action of colchicine, the alkaloid of colchicum.

The drug. (1) Excites the nerve endings in plain muscle, but has no action on heart muscle or the muscular tissue of glands.

(2) Causes a marked eucytosis.

(3) Increases activity of the bone marrow.

(4) Stimulates the intestinal glands to produce abundant secretion, and normal digestive processes are improved.

(5) Controls the production of insoluble urate

- (6) Increases the mucous and glandular secretions of the stomach, intestines, liver, kidneys and skin.
- (7) Has a selective action on the sensory nerves and spinal cord (Shoemaker).
- (8) Is an antipodagraic and a true cholagogue (Rutherford).

2. Piperazine gr. iii dissolved in lithia water twice a day, an hour after meal.

3. Thiolian—(a laxative salt of lithia). Dose a teaspoonful in water twice a day.

4. Sal-Hepatica (an effervescent saline laxative and uric acid solvent). Dose a teaspoonful dissolved in a glassful of water an hour before principal meals.

5. R

Pot carb.	gr. vii
Lithii Carb	gr. ii
Piperazine	gr. ii ss
Liq : Arsenicalis	m. i
Elix saccharin	m. xv
Aq :	ad ʒj

mft. for a dose . sig. one thrice a day.

6 R

Vin : Colchici	m. x
Lithii bromide	gr. iii
Ammon Salicylas :	gr. iii
Ext. Cascara sag : Liq	m. xxx.
Aqua Chloroformi	ad ʒj

mft. for a dose : sig. one thrice a day.

7. Colchi-sal capsules :

Colchi-sal is administered in the following way, according to the directions given by Robin, Laborde, Constant, etc :

- 1st day : 4 capsules four times daily ,
- 2nd day : 3 capsules four times daily :
- 3rd day : 2 capsules four times daily ;
- 4th day : 2 capsules four times daily ;

8. Carnot (*Progress Medical*, 1908, No. 23) remarks that the nucleins of food during digestion break up into various bodies, two of them being uric and thymic acid which are produced under normal conditions simultaneously. Uric and thymic acids circulate together in a loose association and in gouty subjects imperfect assimilation and secondary decompositions lead to a lessened formation of the thymic acid, hence the precipitation of urates occurs. He claims that thymic acid is the real cause of the solubility of uric acid in the blood serum, since the urates are not deposited in the tissues.

Externally :—

R

Sodii Carb :	℥ iv
Lint : Belladonna	℥ ii
— opii	℥ iss
Aqua	ad ℥ viii

mft. Lint : sig. Saturate cotton wool with half of the lotion and half of hot water ; wrap it over the affected joints, cover it with oiled silk and bandage ; the limb should be elevated.

(Gout Number of the Practitioner)

2. The writer recommends the following. Warp up the joint with saturated solution of mag. sulph. followed by bandage as mentioned above.

(iv) To strengthen the patient with tonic during convalescence.

R

Liq : sodii arseniatis	m iii
Sodii Iodide	gr. iv
Ext. Cascara Sag ; Evacuance.	℥ ss
Ext : Glycyrrhizæ liq :	m. xx
Aq : Chloroformi	ad ℥ i

mft. for a dose : sig : one twice a day after meal :

B. Chronic :—

Internally :—

1 R

Colchicine :	gr. $\frac{1}{8}$
Ext. Nux. Vomica ;	gr. $\frac{1}{4}$
gentian :	gr. 1

mft. for a Pill : sig : one thrice a day

2 R

Guaiacum Resin gr. 5—10 in catchet twice a day.

(Gout Number of the Practitioner)

3 Pot. Iodide with alteratives is good

4. Laville' Liquer : is an exceedingly good medicine in chronic form of the disease

N. B.—1. Avoid sodium Salt (Common Salt) which in combination with uric acid forms sodium bi-urates and is deposited in the joints where circulation is sluggish.

2 Avoid fomentation over joints, as it leads to synovial effusion

Externally :—

Apply betol oil over the joint.

Salt Pack in Rheumatic Gout.

Jonathan Hutchinson (*Polyclinic*) said that he knew of no remedy so effectual in getting rid of irritability and synovial infusion, in connection with rheumatic gout, as the salt pack. This consists of flannel, soaked in a saturated brine of common salt and wrapped around the affected joint, covered with oiled silk and a bandage, and kept on the whole night. It should be applied every night until a cure is effected.—*Medical Record*.

The writer takes the liberty of quoting the advices of Dr. Gilbert A. Bannatynæ, M.D., (*Practitioner*, July, 1909) "Uric acid does not exist in the blood in a free state, but may be found there in combination as a urate (quadriurate). In the normal state this is eliminated, naturally, but should anything interfere with this elimination, certain changes occur which transform the soluble urate into biurate of sodium, and in this form it is deposited as an insoluble crystal in the tissues. Our aim in the treatment of gout, therefore, must be, in the first instance, to diminish the tendency of the system to accumulate urates in the body fluids, and secondly to prevent the deposit of them in the tissues as crystals of sodium biurate

To sum up then, the treatment of the attack of gout should be based upon the use of colchicine and the salicylates. The diet should be exclusively liquid and consist of milk, diuretic drinks and decoctions of cereals. The milk, should be mixed with lime water. The mineral waters should be given with moderation during an attack as they are apt to raise the blood pressure

PURPURA.

Purpura is not a disease, it is the symptom of some latent disease.

It occurs in .—

1. Infectious diseases *e. g.* typhoid, pyæmia
2. Toxic causes *e. g.* snake poisoning, ergot poisoning etc.
3. Cachectic diseases *e. g.* cancer, tuberculosis etc.
4. Neurotic diseases *e. g.* locomotor ataxia, transverse myelitis
5. Mechanical strain *e. g.* hooping-cough, epilepsy etc.

Treatment :—

Treat the disease of which it is a mere symptom.

Tonics, good food and fresh air are indispensable.

Injectations of artificial serum are indicated in grave cases, but should be given with the greatest care.

(*G. Dieulafoy's text book of Medicine, Vol. ii, page 1854.*)

SCURVY.

Scurvy is a constitutional disease characterised by debility, anæmia, a spongy condition of gums and a tendency to hæmorrhages.

It occurs mostly in cases where diet consists either exclusively of milk or of artificially prepared food.

Cause :—

i Chemical theory :—

- (a) Garrod holds that the defect is in the absence of the potassic salts.
- (b) Others believe that the chief factor is the absence of the organic salts present in fruits and vegetables.

Against the theory—

The Esquimaux who lives largely on blubber, and who rarely eats vegetables does not suffer from scurvy.

- (c) Ralfe believes that the absence of malates, citrates and lactates from the food, reduces the alkalinity of the blood.

ii Bacteriological theory :—

Bacteriologists conclude that the disease depends upon a specific micro-organism.

iii Psychological theory :—

Mental depression plays an important role :

iv Toxic theory :—

Some toxic substance derived from decomposition in the food, produces scurvy

Classical symptoms are :—

1. Spongy gums bleed easily, teeth, are generally loose, breath is foul.

2. Hæmorrhages beneath the mucous membranes of the mouth and petechial hæmorrhages are common.

There may be epistaxis, hæmaturia, sub-conjunctival hæmorrhage.

3. The hard brawny infiltration of the hams and the large echymoses and yellow discolourations in the hams and on the inner side of the thighs are quite characteristic.

4. Palpitation of heart is a prominent symptom, hæmic murmur can be heard :

5. In later stages there may be fever, great mental depression.

Treatment.
Prophylaxis :—

Antiscorbutic articles of diet : *e. g.* fresh fruit, vegetable and meat etc., are strongly recommended.

Medical :—

R

Tinc ferri perchloride :	m. x
Tinc : cinchona Co :	m. xx
Inf : gentian Co :	ad. ʒ i

mft. for a dose : sig. one thrice a day.

N. B.—The above mixture is chemically compatible but its physiological action is excellent.

Hygienic treatment :—

Absolute rest in bed is absolutely necessary

Fresh air and sun shine are also indispensable .

Dietetic treatment :

1. Fresh raw milk.
 2. Lemon Juice.
 3. Raw meat Juice.
 4. Fresh vegetables
-

HÆMOPHILIA.

Hæmophilia or the hæmorrhagic diatheses is a condition in which bleeding is prone to occur spontaneously and is very difficult to arrest.

The bleeding may be started by the most trifling injury such as extraction of a tooth, scratch on the finger

It occurs in the members of the same family and appears to be hereditary , it occurs nearly always in the males, although it is almost invariably transmitted through the female line

Treatment :—***Internally :—***

R

Calcium Chloride	gr x
Aq : Chloroformi	ad ʒ i

mft. for a dose : sig. one every four hours.

Locally :—

Apply a graduated compress or tampon of

- (i) Tinc ferri perchloride.
 - (ii) Antipyrine solution (50 per cent.)
 - (iii) Liq : Adrenalin (1 in 1000.)
-

DIABETES.

Diabetes Mellitus (from Greek, *dia*, through, and *baino* I flow, and *Melitta*, a bee ; *Glycosuria*—sugar in the urine).

Diabetes has been defined to be “a disease of faulty metabolism of such a nature that the system is deprived of the power to utilize carbohydrates in a manner necessary for the maintenance of life. Death ensues from carbohydrate starvation.”

Before describing the treatment of Diabetes Mellitus, the writer thinks it better to say a few words about the disease itself. The pathology of diabetes is still shrouded with obscurity. The writer briefly summarises the latest theories as advocated by Prof Pavy, Prof. Von Noorden, the greatest authorities on Diabetes and others.

Pavy's theory —

The author denies that free sugar normally reaches the circulation from the liver. He elaborates the view that lymphocytes in the intestinal villi are identified with carbohydrate assimilation. These lymphocytes pass into the circulation through the lymphatic and not through the capillaries, and the carbohydrates get into the circulation in the form of a complex proteid-containing molecule which cannot be filtered off in the urine.

The carbohydrates which are not assimilated at the seat of absorption pass into the portal blood as sugar, and on reaching the liver they become converted into glycogen.

* The only point upon which all observers are agreed observes Dr. Haig as regards the pathology of diabetes, is congestion of the liver and portal system.

Capillary dilatation is caused by acids, tonic constriction by alkalis, hence the rationale of mineral water e.g. vichy, Rub nat, apenta etc

This in its turn is broken down into molecules of glucose which are taken on as side chains by certain proteid constituents, of the blood and transported to the tissues where ultimate utilization occurs. The failure of this intricate process of physiology constitutes, in the view of the author, the disease diabetes.

Von. Noorden's Theory.

The author regards diabetes as the loss of capacity of the liver and muscles to take up glucose from the circulating blood and store it as glycogen. Coincidentally with this the cells of the body lose the power of burning off the carbohydrates. At the same time the carbohydrates become inaccessible to the fat-forming cells. Until this latter failure has taken place, the diabetes is masked and probably masquerades as obesity. In severe cases the organism makes use of fat to form sugar.

Manfred Fraenkel's theory.

In the *Med. Klinik*, 1905, Nos. 55 and 56, Dr. Manfred Fraenkel of Berlin presented a new theory of the pathogenesis of diabetes based on the idea that normally the transformation of glycogen into sugar is due to a ferment which arises from the decomposition of red blood corpuscles. This ferment is produced more rapidly when there are circulatory disturbances, until a point is reached when the quantity of sugar created no longer can be utilized, supersaturates the blood and, is excreted in the urine.

A condition for normal utilization of sugar is a normally functioning vasomotor system, with its centre on the floor of the rhomboid fossa and a normal pancreas. The trophic factors are of no small importance. A dominating position over the entire vasomotor system of the liver must be ascribed to the vagus. In this connection the relationship between diabetes and tuberculosis is of much interest. Bernerd found sugar forming fibre in the long fibres of the vagus, so

that any injury to the former must also strike the latter. This may explain the secondary occurrence of tuberculosis in diabetes.

Faenkel then points out the possibility of influencing the vagus by means of eserine. In diabetes all other organs always show signs of extensive hyperæmia. The final link in his chain of reasoning is the significance of arteriosclerosis. He cites Noorden and Croner in support of the connection between it and diabetes. Arteriosclerosis is primarily the expression of circulatory disturbance, and according to the location of the vascular injury one subject is exempt from diabetes, while another succumbs thereto when the arteriosclerosis establishes itself in the hepatic vessels.

Alfred King's Theory.

A new line of thought is also introduced in an article by Alfred King, M.D., of Portland, Maine, entitled "Diabetes mellitus as an infectious disease," in which he adduces evidence which suggests pointedly that diabetes mellitus is a fungus disease due to the *saccharomyces cerevisiæ* which he found in abundance in the blood, and which produces glucose forming enzymes.

A new line of thought appears in the *American Journal of Clinical Medicine* July 1910 tracing the origin of diabetes mellitus to intestinal parasite and the combined use of Santonin Calomel and Podophyllin are recommended but "one swallow does not make a summer."

Whatever may be the views of diabetes mellitus, it is a disease of mal-assimilation. PROF. OSLER rightly remarks :—"Diabetes Mellitus a disorder of nutrition."

Frerich's remarks :—

"Every diabetic must sooner or later, in consequence of loss of health and strength run a risk of sudden and unexpected death. He is like a weary wanderer in a thick mist

following a narrow path by the side of a roaring torrent, into which he is in danger of falling if he anxiously quickens his pace or strikes against a stone in the way."

It is a disease of the rich, it is common amongst the intellectual class of Hindus *e. g.* pleaders, preachers, physicians and others. Mahomedans are as a rule exempt from it. It is to a certain extent contagious, as cases are known in which wives are affected by their diabetic husbands. It runs in families. Diabetic patients, as a rule, suffer from subnormal temperature, and when they have fever, then their urine is generally free from or contains very small amount of sugar. Diabetes of a temperate country like India is quite different from diabetes of cold climate, as in the latter the prognosis of a young diabetic is grave, but we learn from experience that is not the case here. A young diabetic may live a good old age if he knows or tries to understand the principles of life: by this the writer means not to act against Nature, to avoid excesses, and to limit his starchy diet till carbohydrate tolerance. Prof. Von Noorden calls this the tolerating power of the individual.

The formula for the tolerance is as follows.

Tolerance = Standard diet + x. grains starch.

X. representing the number of grains of starch the patient can ingest without the appearance of sugar in the urine.

If the patient excrete sugar after being on the standard diet for five days, it indicates that he is suffering from a grave form of the malady. It further means that the tolerance for carbohydrates is entirely destroyed, and that the sugar eliminated in the urine is manufactured from his tissue-albumins.

For such a patient Naunyn recommends that a "Hunger Tag" or hunger-day be instituted during which no food whatsoever is taken for twenty four hours. The patient may become aglycosuric as a result of starvation.

"He is the best physician of his own self to regulate it. Drugs are, in my opinion, useless, nay harmful, but when

complaints are pressing, medicine should be used as medicine with caution.

Drugs play a very minor part in the treatment of diabetes. It is the duty of the practitioner, to discourage the patient from using the so-called cures advertised blatantly in the daily press.

A diabetic patient recently remarks : -

" I had been passing 32 grains of sugar to each ounce of urine and was prescribed a severe starchless diet with opium.

The sugar disappeared in six weeks but I have lost 10 pounds in weight and am losing fast ; I have no appetite and I feel very weak. *Give me back my sugar ;* I am really worse without it."

This patient is not wrong in his statement.

Nothing is more conducive to the early development of diabetes than worry and anxiety. We who for countless generations have believed in the law of Karma, should be the last people on earth to be habitually subject to worry. In this connection, I shall quote a very instructive passage from a work by Mrs. Besant as a remedy. One way of getting rid of worry is " to train the mind to rest on the good Law, thus establishing a habit of content. Here the man dwells on the thought that all circumstances work within the Law and that nought happens by chance, only that which the Law brings to us can reach us by whatever hand it may outwardly come. Nothing can injure us that is not our due brought to us by our own previous willing and acting, none can wrong us save as an instrument of the law, collecting a debt due from us. Even if an anticipation of pain or trouble come to the mind, it will be well to face it calmly, accept it, agree to it. Most of the sting disappears when we acquiesce in the finding of the law, whatever it may be, and we may do it the more easily if we remember that the law works ever to free us, by exacting the debts that keep us in prison and though it bring us pain, the pain is but the way to

happyness. All pain, come how it may, works for one ultimate bliss and is but breaking the bonds which keep us tied to the whirling wheel of births and deaths. When these thoughts have become habitual the mind ceases to worry."

The classical symptoms are :—

1. Polyuria.
2. Excessive thirst.
3. Voracious appetite
4. Rapid loss of flesh.
5. Glycosuria.

For practical treatment the writer divides diabetes into five classes :—

- i. Alimentary Glycosuria.
- ii. Nervous Glycosuria.
- iii. Hæpatic Glycosuria.
- iv. Nervous and hæpatic combined Glycosuria.
- v. Pancreatic Glycosuria.

i. Alimentary Glycosuria :—

It is due to mere excess of sugar poured into the blood from the alimentary canal in excess of what the system is capable of assimilating. Cut short sugar from the meal, regulate his diet, give him complex proteid-bearing articles of carbohydrates and not pure starch, and open bowel by saline aperient, *e.g.*, Apenta water, Carlsbad water. &c.

The writer prefers sodii. Phosph. effervescence (*P. D. & Co.*) a cupful early in the morning in a glass of lukewarm water.

We can thus reduce sugar to a very minimum standard.

N. R.—The above plan should be strictly observed through all classes of diabetes,

ii. Nervous Glycosuria :—

The puncture of Claude Bernard in the fourth ventricle of medula oblongata, or the nervous shock causes sugar to appear in the urine.

The following are the best :—

Internally:—

1. Bromides in the form of triple bromides and hydrobromic acid (dil.)

2. Liq. auri et arsenic bromide, *m. v.*, twice a day after meal, or Arsenauro (*i. e.* double bromide of arsenic and gold) *m. v.* twice a day after meal.

N. B.—Stop the medicine when toxic symptoms ensue, *viz.*, puffiness about eyes, diarrhoea, colic pain, &c

Arsenic with gold bromide, pushed to saturation, will stimulate the cells as nothing else will, relieving the system of effete material and curing diabetes up to a certain stage: (*The American journal of clinical med: January 1910.*)

3. Acid Glycero-Phosphate Co

Dose :—a teaspoonful twice a day after meal

Locally :—

Spinal baths with cold water once a day is an excellent tonic to the nervous system

iii. Hepatic Glycosuria :—

Patients are as a rule plethoric, they roll in wealth without physical exercise.

Salicylates and their modified preparation aspirin are the best medicines in these cases.

The following are the best combinations :—

1. *R*

Sodii Salicylas	3 i
Mag. Sulph	3 vi
Glycerine	3 iii
Aq.	ad 3 viii

mft. Put 12 marks sig. one thrice a day

2. *R*

Lethium Salicylas	gr v,
Antipyrine	gr. ii
Pulv. Glycyrrhizæ Co.	3 ss

mft. for a pulv : sig. one twice a day an hour after meal

N. B.—In gouty diathesis the above prescription will act like a charm

3. Aspirin gr. x.

mft. for a pulv : Sig one thrice a day.

(See my article on Rheumatism, regarding its mode of administration.)

iv Nervous and Hæpatic Combined :—

This is the usual form of diabetes which we frequently come across in our practice.

The following prescriptions are recommended :—

I. \mathcal{R}

Codin phosph	gr $\frac{1}{2}$
Strychnine phosph	gr. $\frac{1}{8}$
Ext. Belladonna	gr. $\frac{1}{4}$
Alcin (if constipation)	gr. $\frac{1}{2}$

mft. for a pill : sig. one thrice a day.

Rudisch (*Medical Record*) recommends atropine. Two preparations are recommended.

(a) methyl bromide of atropine : dose $\frac{1}{8}$ gr. thrice a day, it is less toxic and slow in action

(b) Atropine sulph $\frac{1}{100}$ gr. : thrice a day.

N. B —Atropine has a specific effect on the excretion of sugar.

2. Dried pulv of the seed of black jam fruit was spoken of highly by Lieut Colonel R. C. Chundra. He prescribed jamboline powder gr. x-xv twice a day after meal.

3. Writer's favourite formula :—

\mathcal{R}

Ferri phosph :	gr. iii ss
Codin phosph.	gr. i
Liq. acidi phosphatis (P. D. & Co.)	m. x
Ext. Jambolin liq. (Bengal)	ʒ i
Aq.	ad. ʒ i

mft. for a dose : sig. one twice a day half an hour after meal.

4. J Rudisch (*Jour American med. association October, 23rd 1909*) remarks that carbohydrate-free diet and soda Bicarb, 30-40 grs. a day, have a distinctly inhibitory action on the excretion of sugar.

v. Pancreatic Glycosuria.

Patient as a rule is thin :

Diabetes originates in lesions in the islands of Langerhans. Pancreatic tissue contains two distinct classes of parenchymatous structure, the ordinary gland acini which secrete the digestive juices of the organ and empty into the pancreatic duct, and the islands of Langerhans, which appear to be blood glands and discharge their secretions into the circulation.

Diabetes might then be defined as an increased internal dissociation of tissue (possibly fat) into sugar, caused by a toxic substance which is produced in the course of normal metabolism and which is normally neutralised by the pancreas.

Trypsogen (G. W. Carnrick & Co.) tablets are recommended. Dose: two tablets twice a day immediately after meal progressively increased to a point of tolerance *viz.*, dizziness, nausea, intestinal irritation with diarrhoea, etc.

Sheep's and calves' pancreas have been given raw.

(*Burney yeo's Manual of Medical treatment Vol II page 533*)

Pancreas Diabetes, Treatment.

Dr. Bruck remarks that the joint action of the adrenalin and pancreatic secretions under normal conditions prevent glycosuria, but if the pancreatic secretion is lacking, the adrenalin gets the upper hand and glycosuria follows. He therefore, suggests that the antagonistic action of adrenalin might be utilised in the treatment of diabetes. No glycosuria is produced in dogs after the pancreas is removed and the adrenalin secretion is inhibited or if an active pancreas preparation is injected into the veins. The pancreas diabetes is, therefore, rather a negative pancreas and a positive supra-

renal diabetes, as the overproduction of adrenal is responsible for the glycosuria. He suggests that the same principle might be applied in pancreas diabetes, which is the base for the treatment of exophthalmic goiter with the serum or milk of thyroidectomized animals. By excluding the adrenalin from the circulation, the milk or serum of animals thus treated might prove an effectual means of supplying the diabetic with the missing neutralizing pancreatic secretion. (*Medizinische klinick Berlin, November 15th 1908.*)

G. Dieulafoy in *the text book of medicine 1910 vol. II page 1925*, recommends antipyrine, arsenic and alkaline remedies

For the first week the patient takes twice daily with meals, a cachet composed of 5 grains of antipyrine and 3 grains of bicarbonate of Soda.

During the second week the antipyrine is stopped and arsenic prescribed

The patient takes with each meal a tea spoonful of a solution containing 2 ounces of distilled water and half a grain of arseniate of Soda

These two drugs are continued alternately for several months together with alkaline solutions, such as vichy water carlsbad "

Treatment of Diabetes by Cellasin :—

(*Sugar, Starch and fatsplitting ferment*)

In Diabetes Mellitus Cellasin has been found to yield the best results when treatment is begun with 14 grs. taken 4 times daily, this dosage being rapidly increased to 21 grs. 4 times daily, or 84 grains per diem.

In stubborn cases, Maximum, Regular and Persistent Dosage is an important feature of treatment

A special tablet has been prepared for use in diabetes as follows :

No. 1 Tablet
 R Cellasin, gr. 7
 Soda bicarb., gr. 3

After the Disappearance of sugar the Treatment should be continued with the Minimum dosage six weeks longer.

N. B.—Saccharin should not be used by a diabetic under Cellasin treatment. It seems to inhibit the action of the ferment

Treat the Patient symptomatically :—

1. Thirst :—

It is an indication of the necessity of replacing the large quantities of water lost by the kidneys.

The following are worthy of a trial :—

1. Frequent rinsing the mouth with water is very useful to quench thirst.

2. R

Liq. acid Phosph. (P. D. & Co) :	m. xv
Saxin tabloid	one.
Aq.	ad. O i

Dose : A sip when thirsty.

3 R

Lemon juice of one	
Glycerine	3 jss.
Water having half	
poa of "Jab. chatu"	
dissolved in it	} O ii

Dose :—A sip to satisfy the demands of nature.

4. Drink fresh whey instead of water.

5. R

Cream of tartar	3j
Boiling water	O. I
Saccharin (to sweeten)	
Lemon peel (for flavour)	

Dose : ad. libitum.

2. Pimple and boil :—

They may lead to a carbuncle.

This excess of sugar in the blood diminishes its alkalinity and lowers the vital resistance of the body against disease. Besides in diabetes the peripheral circulation is slow, and if xanthin, lecithin products retain in the tissue, there is a tendency to form pimple, boil and carbuncle.

Daily baths assist materially in keeping the skin functions active, and diminish the liability to furunculosis.

Hence diabetics should clean their body daily and be ever on the alert to detect any pimple or boil and destroy the morbid process by touching the part with strong carbolic acid and thereby may avert a fatal carbuncle.

3. Sores, gangrene, pruritus vulvæ, stomatitis &c.

M. Carnot (Progress Medical of May 1910) recommends the application of brewers yeast. His object is to cause the sugar to disappear automatically from the inflamed parts by local wash of a tablespoonful of fresh yeast in a liter of water.

M. Dieulafoy (Academie de Medecine, Paris Feb. 1910) advocates the application of hot air in diabetic gangrene.

The gangrenous part is treated by the application, twice daily, of douches of hot air produced by a special apparatus capable of supplying a current of 50 liters of air per minute at temperatures ranging from 300°C to 700°C. The jet of air is projected a distance of from 5 to 10 Centimeters and each sitting lasted from 30 to 45 minutes.

A strict antidiabetic regimen, injections of Cacodylate of sodium, and to relieve the pain and induce sleep, veronal and morphine are recommended.

4. Itching of the skin.

Carbolic lotion or carbolic soap is lauded to be the best on account of its anæsthetic property. The time-honoured custom of the Hindus to allay itching,

sounds to me highly scientific : they allow the itching patient to sleep on a bed of "Neem" leaves. The sensation caused by the margin of leaves masks the complaint of itching, stimulates and subsequently strengthens the peripheral nerves.

5 Roughness of the skin:—

Wash the part antiseptically and apply one of the following creams :—

- a.* Emmolentine.
- b* Ethymol cream
- c.* Cold Cream
- d.* Hazelline Cream.

6. Preservation of teeth :—

Teeth should be rubbed well once or twice a day with any of the following —

- i. Vinolia tooth powder :
- ii. Euthymol tooth powder :
- iii. Euthymol tooth paste .
- iv. Liq : dentifrice
- v. Odol.

7 Albumin in the urine:—

Cut short meat diet if any , feed him with liberal mixed diet

The following may be tried :—

R

Stronchium lactate	gr iiss
Codein phosph .	gr. 1/48
Ext : Belladonna :	gr. 1/4
Ext : Gentain	q s

mft. for a pill : sig one thrice a day.

8. Loss of sexual power:—

Spermine manufactured from testicular substance of dog or bull (Zelnichin). Testicle of goat fried in "ghee" acts admirably well

9. To avoid ulcer on prepuce—

Wash the part after each micturition with cold water.

10. Dyspepsia ;—

Vide my article on dyspepsia

11. Constipation ;—

As large amount of fluid is drained away by the kidneys, there remains less amount in the bowel, hence constipation.

The *Physician's Drug News* points out that anything that will disguise the taste of epsom salts (sulphate of magnesia) will disguise the taste of glauber salt (sodium sulphate). It publishes a formula for palatable preparations of epsom salts, as follows .—

R

Epsom salts	1 lb av
Tinct. Cardamom	½ fl. ounce.
Vanillin	10 grains.
Saccharin	90 grains.
Alcohol	1 fl. ounce.
Glycerine	1 fl. ounce.
Coffee roasted and ground)	1 ounce, av.
Water sufficient to make	1 quart.

Stir the coffee in one quart of hot water and allow to stand fifteen minutes, then add the salts. Dissolve the vanillin in the alcohol, add the tincture of cardamom, the saccharin and the glycerine and add to the salt solution when cool. Shake well and filter.

The writer recommends the above formula occasionally during Constipation.

12. General debility :—

Wine of Hæmoglobin (*Deschiens*) or vin de Hæmoglobin.

Dose: a sherry glassful after meals.

13. Sleeplessness :—

Bromural is recommended. It induces natural sleep and is free from disagreeable after-effects.

14. Coma :—

From the metabolism of fat B-oxybuteric acid is manufactured in our chemical laboratory, the acid in its turn forms acetone and diacetic acid, and these are the harbinger of diabetic coma. This is the rock over which we most often stumble.

Directly coma sets in the patient shows a well marked hyperpnœa : a condition of acidosis which Naunyn terms "the flooding of the circulation and tissues with acids" The 'alkalinity' of the blood—that is, its power of combining with acids—is reduced, and the quantity of carbon dioxide in the patient's blood is materially diminished.

The early symptoms of diabetic coma are :—

1. Sudden diminution of the amount of sugar in the urine (not under treatment).
2. Sweet odour of the breath somewhat resembling that of Chloroform.
3. Sickness and pain in the stomach.
4. Presence of acetone and diacetic acid in the urine.
5. A rapid pulse is one of the early signs of the onset of coma.

Hence when we detect patches of cloud gradually threatening to be dark and darker—an onset of approaching coma—we should treat him as follows :—

1. Open bowels by a good purgative :—

R

Calomel	gr. $\frac{1}{4}$
Sodii Bicarb	gr. v

mit. for a pulv : sig. one every 2 hours till bowel is opened.

2. Sodii bicarb, ʒss. in soda water or milk till urine is alkaline.

Sodium citrate, which Boas considers the best antacid in hyperacidity, is recommended by Lichtwitz in the acidosis of diabetes mellitus. It is oxidized in the organism to sodium bicarbonate, and thus has the same power of combating acidosis as the latter, to which however it is superior in that it is more easily borne in large quantities by the stomach, and in that its smaller degree of alkalinity more readily permits of its use hypodermically.—LICHTWITZ (*Therap. Monatsh.*, 1911, No. 2).

3. Vapour bath to induce diaphoresis.
4. Saline subcutaneously.
5. Stimulants by enema or subcutaneously if required.

Ozonic ether (*Martindale's extra Pharmacopœa*) m xxx
thrice a day immediately after meal ; probably it
oxidises the sugar.

6. Oxygen inhalation. if there be need of it.

7. R

Pot. Citras	gr. v
Sodii citras	gr. ii
Ammon. citras	gr. i
Barley water	℥ i

mft. for a dose : sig. it may be used alternately with soda solution.

It is however, an established fact that when acetone has once been produced, the allowance of a certain amount of carbohydrates in the shape of oatmeal potatoes, etc., will relieve the patient from acetone.

8. In gouty patients with hypertrophied heart and high arterial tension prescribe any of the following :

R

Sodii Nitris	gr. iii
Sodii citras	gr. iv
Aq.	ad. ℥ i

mft. for a dose : sig. one every 3 hrs. up to 3 or 4 doses.

Tabloid Trinitrine gr. 1/100

N. B.—Don't use Digitalis or Strophanthus in this case.

9 Weakness of heart (ordinary case).—Prescribe Strophanthin gr. $\frac{1}{100}$ or Digitalin gr. $\frac{1}{100}$ tabloid.

10 Recently Von Noorden has advocated the subcutaneous injection of 5 to 10 per cent. solution of lævulose in cases with threatened coma.

Naunyn prefers its administration either by mouth or enema.

N. B.—1. Nitrate of Uranium is spoken of highly by DR. SAMUEL WEST (*B. M. J. August 24th 1895, and September 19th, 1896*) and DR. C. H. BOND (*Practitioner, September 1898*)

It diminishes the thirst, reduces the amount of urine passed, reduces the percentage of sugar, the dose being gr. iii twice a day always after food in a glass of water.

DR. TIRARD, a hero in medicine, on the other hand regards it as a dangerous medicine in diabetes: it produces inflammation of intestine and kidneys, lowers nervous power, and even promotes the appearance of sugar in the urine.

2. E. SMITH (*Practitioner February 1910*) recommends calcium Iodide gr. v thrice a day.

3. In *Diabetes Incepidus* powdered root of Valerian gr. v. increased up to gr. xxx is recommended.

N. B. - DR. PAVY recently delivered before the Royal College of Physicians of London an interesting lecture on the treatment of Diabetes Mellitus. The essential treatment is the restoration of the defective assimilative power. Science ought to, sooner or later, put us in possession of something which will set right the defective metabolism that is present in diabetes. Such a substance will be allied to the thyroid extract that sets right the faulty metabolism in myxœdema.

Psychic treatment

The sufferer from diabetes is as a rule a pessimist ; he takes pleasure in brooding over his fate, doubts of the future and thereby loses his enjoyment of the present, and only too often, even while still in possession of his bodily strength, loses all pleasure in his work as well as his energy of will. Our aim therefore is to restore the self-reliance of the patient. Comforting words, procurement of sleep, resumption of occupation or change of the same, in other cases rest, change of surroundings, travel, bathing, cold-water-cures 'fat-and-flesh' diet, and the like are the factors contributing to the solution of our problem

It is a bad sign when a patient begins hypochondriacally to make his spirits and subjective feelings dependent upon the results of the last urinary analysis by the physician, instead of taking his own strength as a measure of his actual condition.

Electric treatment:—

Much has been written on the treatment of diabetes by high-frequency electric methods, and cures have been reported.

Hygienic treatment

1. It is a well known fact that under the influence of muscular exercise, walking and bicycling, bordering on fatigue, glycosuria is often distinctly diminished. It is a good rule before the day's exercise is commenced to stand out in the open with the hands placed on the hips and shoulders thrown back and breathe slowly and deeply about half a dozen times to begin with. Exercise to the point of fatigue results in an auto-intoxication, increased disintegration of albumin, and lessened assimilation.

2. Free sweating lowers the output of sugar ; hence try to encourage diaphoresis,

3. Change of climate is an elixir of life to a diabetic: the balmy mountain air or refreshing cool sea breeze infuses new vigor to a gradually dilapidated frame.

According to the researches of Bouyssy and Henriet, Ozone is formed by the ultra-violet rays of the sun. The Ozone-content of the air is, therefore greater on sunny days, also when wind blows from the south west, and when it rains. Ozone is said to form in the higher strata of the air and is brought down thence by the southwest winds where it also originates. The same is the case with the rain, the drops of which are surrounded by Ozone which they bring down to the earth.

The contrary is the case with carbondi-oxide, which originates in the earth and increases in the air when there is less sunshine, southwest winds and rain.—*Oester chemistg in Pharm Zentralk*

4. Baths—a carefully graduated course of cold baths is particularly beneficial. This will increase the oxidation of sugar, encourage the liver, strengthen the heart, and increase the alkalinity of the blood. Bathe daily in fresh water, rub your skin well and be on the look-out for a pimple or boil and destroy it by strong carbolic acid.

5. Avoid draft as an intercurrent disease like pneumonia may sweep him off.

6. Avoid constipation by salines.

The writer prefers Sodii. Phosph effervescence (P.D. & Co.) a cupful in a glass of lukewarm water early in the morning. It should be taken by sips, a better plan would be to take half a cupful at bed-time and the remaining half early in the morning.

Enema of tepid water from time to time is an excellent means of washing the colon.

7. The old adage, repeated fast-days during the regime of diabetes especially during new and full moon" is well known to the Hindus.

8. Drinks :—No attempt should be made to restrict the water taken by the diabetic.

No good will follow by doing so, as the thirst and polyuria are dependent on the hyper-glycæmia; Harm, on the other hand, is likely to ensue, as the increased thirst causes increased mental and physical distress.

Dietetic treatment.—

This is the essential part of treatment. Certain amount of carbohydrates in the diet spares proteid metabolism. No matter what the condition of urine may be with reference to the presence or absence of sugar, the patient on any line of treatment must be regarded as doing badly if his weight is progressively diminishing. It is much better for the individual to excrete moderate amounts of sugar and hold or increase his weight, than to be aglycosuric and steadily lose weight. (*A system of medicine by Osler and Mc. Crae vol. i page 789*).

Mixed liberal diet in which the carbohydrates are entangled with complex proteid molecules is recommended.

The writer does not agree with PROF. PAVY to feed patient exclusively on meat and starch free diet. The danger of excess meat diet arises from the acidifying effect of albumin upon the system and leads the patient on to acidæmia and coma, besides, it produces invariably in most of my cases albuminuria.

L. Kuttner (*Med Klin May 9, 1909*) remarks that in severe cases of diabetes the excessive quantities of proteid which are often given, increase the amount of sugar, while in slight cases, or those of medium severity, limitation of the proteids is beneficial.

As the disease undermines the sap the patient must be fed with nutritious diet in concentrated form to balance wasting.

1. Albumin wards off loss of nutrition.
2. Fat and carbohydrate supply calories.

3. Carbohydrate till its point of tolerance keeps the blood alkaline.

The following simple rules as to eating and drinking should be always remembered. Although they are not generally unknown, sufficient attention is seldom paid to them and for that reason alone it will bear repetition. Food should be taken as a necessity and not as a luxury—it must be strictly eating to live and not living to eat. The quantity taken at each time should be regulated according to the good old rule, namely, three-fourth of the stomach to be filled and one-fourth left empty. Most of us suffer from eating too much than eating too little. Eat only when you feel hungry and drink only when you feel thirsty. Remember the golden rule of “after dinner sit a while, after supper walk a mile.”

The following is the writer's ideal Menu of Diet—

Early in the morning:—Mild exercise without feeling fatigued.

7 A.M.—Half boiled two hen's eggs with little pepper and salt, toasted bread or rusk or plasmon biscuit, and butter, little starchless marmalade, orange or lemon (Callard's) Remember “Fat is Nature's savings bank?”

9 A.M.—Oatmeal porridge with milk sweetened with saxin or saccharine tabloid or tablet.

10-30 A.M.—Little rice, ghee with boiled or fried vegetables hand-made “rote” and “dal”; fried fish, fish soup; some sort of acid “chutney” if he is fond of it; as a rule advise patients not to eat it.

A drachm dose of Huxley's syrup.

11 A.M.—A glass of cocoanut water or butter milk

1 P.M.—Milk, or milk plasmon, or milk sanatogen, or fresh curd sweetened with saxin or saccharine or fermented milk.

4 P.M.—Plenty of fruits of all kinds except date. Mango and papaya may be used sparingly: “Chana”; with little salt “Kachuri,” “Nimke” and “Papur” are good.

5 to 6 P.M.—Gentle walk in the open air.

7 P.M.—Hand-made “rote” or “porota” or “loche” with meat, soup and fried vegetable.

N. B.—Meat should be cooked without aromatic spices which simply tax the gastro-intestinal tract.

A glass of soda water with little Soda Bicarb, dissolved in it ; it prevents hyper-acidity of Blood (PROF. VON NOORDEN).

The list of dietary for the diabetic :—

1. Butcher's meat, poultry, and game.
2. Fishes of all kinds.
3. Cereal 'groups :—*e.g.*, oat, wheat, millet, maize. &c.

Oatmeal porridge is highly nutritious ; little rice is allowed ; hand-made “rote” and bread are good ; toasted bread does more harm than good (Dr. HALE WHITE).

Soy bean gruel mixed with cow's milk.

The gruel should be prepared by soaking the beans over night, stirring to remove the envelop surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained, if necessary. This has the odour and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two.

This soy bean (*glycine hispida*) is an annual leguminous plant which originally grew in a wild state in Cochin China, in the south of Japan, and in Java. It is now being grown in various sections of the country and can be obtained in the open market like any other legumin. (*Archives of Pediatrics, New York, July 1909.*)

An analysis of <i>Soya bean</i>	{	Water	12 per cent.
		Oil	17 ”
		Albuminoids	38 ”
		Carbohydrate	22 ”
		Fibre	5 ”
		Ash	5 .
		Sand	1 ”

PROF. VON NOORDEN'S Oatmeal Food consists of : 8½ ounce (250 grammes) of oatmeal is cooked for about two hours on a moderate fire, with 3 or 4 quarts of water and a little salt : 100 grammes of roborat, gluten, rice, albumin, &c., may be added. When the gruel is done, add 10 ounce (300 grains) of butter and pass through a sieve. Divide the whole into 8 equal parts and take a part every 2 hours. The whole amount must be eaten in 24 hours.

4. Fruits of all kinds except date, sugarcane are allowed ; sweet fruits to be used sparingly.

Though the output of sugar is somewhat increased, the advantages over balance the disadvantage. Varieties of fruit juices sharpen the appetite, supply organic salts, open bowels and quench thirst.

DR. ROBERT SAUNDBY, M. D.; L. L. D. remarks in the *Practitioner*, July 1900 :—

“Sugar of fruit is very often lævulose and many diabetics assimilate this form of sugar when quite unable to consume dextrose.”

“It is well to remember that lævulose (fruit sugar) has been shown to be tolerated better by the diabetic patient than any other form of sugar.”

(*A system of Medicine by Osler and McCrae, Vol. 1, page 792,*)

The following are strongly recommended :—

1. Nuts of all kinds are highly nutritious.

Nuts are superior to all natural food substances for the diabetic, possessing the following properties :—

(a) They contain only an insignificant amount of starch (the chestnut excepted).

(b) They contain a large amount of easily digested fats.

238 DISEASES OF THE PERVERTED METABOLISM.

(c) The albumins of nuts, especially of the almond and pine nut, are more easily digested than flesh meats.

2. Peaches are said to be specific by some western writers.

3. Soft pulp of the seed of "Amra" is spoken of highly by the writer.

4. Figs fried is an excellent adjuvent of diet.

3. The fruit "black jam" and the pulp of the seed are very good.

6. Green vegetables are allowed. They contain potassium and other inorganic salts which increase the alkalinity of the blood.

7. Though physicians of the past wage war against the use of potato it is now regarded by some even as a remedy to the disease, but the value depends upon the method of its use: the skin of potato should remain intact ; boil it in water or better roast it in vapour when the earthy potassium phosphate lying between the rind and potato substance itself is preserved. The real value lies in this phosphate. The patient should limit the point of tolerance of carbohydrate himself.

8. Fat, both animal, *i.e.*, butter, ghee, and fatty meat, and vegetable, *i. e.*, mustard oil and olive oil, are excellent articles of diet.

The patient should make it an *iron rule* that a certain fixed quantity of fatty food is to be included in the daily dietary.

(*Twentieth century practice of Medicine Vol. ii page 153.*)

N.B.—(1) Butter should be well kneaded in cold water before being eaten.

(2) Cheese and even butter are forbidden, but the writer recommends them strongly.

9. Cream and bone-marrow are highly nutritious.

10. Milk and its derivatives ;

Milk is valuable because it contains

- (i) a considerable amount of fat and has therefore a high heat-giving power.
- (ii) lime salts, of which there is an abnormal loss in diabetes.
- (iii) lactose or sugar of milk which is more readily assimilated by most diabetics than many other forms of carbohydrates.
- (a) Plasmon, "Chana"—the casein of milk is Nature's perfect food ; it is an excellent uric acid free article of diet
- (b) Fresh curd, whey, &c.
- (c) Fermented or lactonised milk : it should be made in any of the following ways :—
 - (1) Fermenlactyl tablets (Pasteur Vaccine Co., Paris.)
 - (2) Lactone tablets (P. D. & Co.)

The lactic acid ferment eats up the sugar of milk and transforms it into matter inoffensive to our organism.

11. Lots of highly concentrated proteid substances now flood the market, a list of which is given below :—

- | | | | |
|----------------------------|----|------------|--------------------------|
| (a) From Vegetable Albumen | 1. | Roborat | Make bread of it. |
| | 2. | Aleuronat: | „ cake „ |
| | 3 | Gluten: | „ bread „ |
| (b) Nut Albumen | 1 | Almond | „ cake „ |
| | 2. | Cocoanut | „ cake „ |
| (c) Milk Albumen | 1. | Plasmon | „ biscuit „ |
| | | | (may add to any liquid.) |
| | 2 | Proteine. | „ biscuit „ |
| | | | bread „ |
| | 3. | Casoid: | „ bread „ |
| | | | biscuit „ |

12. Eggs: the very centre of nutrition. HEINRICH STERN advises a dietary of the yolk of eggs which contain a high percentage of fat and do not increase acetone substance.

An egg which weighs 60 grams contains 13 grams of of available material: 7 grams of albumen and 6 grams of fat. The carbohydrates are completely missing. Of the white of albumen, 3 grams are found in the white of the egg, 4 grams in the yolk. The 6 grammes of fat are found in the yolk. According to Voit, one egg corresponds to 150 grams of milk, to 50 grams of meat, and gives 80 calories. It is easily digested, especially if the egg is cooked in the shell, and it does not remain in the stomach more than one or two hours. Prepared on a plate the nutritive value is increased by the addition of fat, but its digestibility is diminished. (*La Progres medical.*)

13. "G. B." Diabetes Whisky for Alcoholics. Alcohol is said to aid the digestion of fat and to make up for the loss in heat-units, and is therefore recommended as a beverage. Coca Wine relieves thirst and acts also as a nervine tonic. (*The Dietetic Treatment of Diabetes by DR. B. D. BASU, p. 32.*)

The use of alcoholic drinks is not essential for persons suffering from diabetes. (*System of Medicine by Allbutt and Rolleston, Vol. iii, p. 204.*)

Dry wines are allowed in advanced cases, since alcohol:—

- (1) has a large caloric coefficient,
- (2) limits the formation of acetone,
- (3) assists the assimilation of sugar,
- (4) favours the digestion of fats, and the metabolism of albumin.

(*Journ. des part, April 23, 1910.*)

14. Fried green vegetables of mustard are said to be efficacious,

15. Cocoanut milk is a very useful beverage for diabetics.

N. B.—Avoid too much starch, sugar, liver and oyster as glycogen is the form in which carbohydrate is present in oyster (*Practical Dietetics* by DR. A. F. PATTEE: p 206).

16. Fresh juice of "Amlak" causes sugar to disappear within a fortnight: it is laxative.

17. "Salup misree" is very efficacious. Boil a teaspoonful in half a pint of milk till dissolved.

In conclusion the writer recommends the following advices:—

Change your diet, give up eating sugar, sweet and too much starchy food, avoid intellectual labour worry and anxiety and take exercise and little opium if required.

Entremets for Diabetics.

Dr. LE GOFF (*Gazette des Hopitaux*) gives some useful formulæ for the preparation of entremets for diabetic subjects:—

Almond cake.

Crush $\frac{1}{2}$ lb. of hulled almonds (*i.e.* plunge in hot water and remove the skins) in a mortar, add two eggs, triturate and place in mould duly smeared with butter. Cook for twenty minutes. This may be slightly salted, or flavoured with vanilla or lemon.

A lighter cake may be made up by adding $\frac{1}{2}$ drachm of bicarbonate of soda and 15 gr. of tartaric acid taking care to mix them thoroughly with the paste.

Pancakes.

1 oz. of gluten flour, $\frac{1}{2}$ oz. of almond flour, one egg, 5 oz. of milk, a little salt and a tablespoonful of glycerine. Beat up the egg and mix it thoroughly with the two flours, then add the milk, salt, and glycerine. Put the paste aside for three hours. then proceed as for ordinary pancakes.

Vanilla pudding.

(Von Noorden): Milk, 5 oz. butter, $\frac{1}{3}$ oz., maizene flour, $\frac{1}{2}$ oz.; whisked egg, crystallose and vanilline *q. s.* to sweeten and flavour. This formula only comprises $\frac{3}{4}$ oz. of carbohydrates

Custard

Two eggs six saccharine tablets, $\frac{1}{2}$ pint of milk. Dissolve the tablets in the milk and heat gently; pour it on the well-beaten eggs and put the mixture into a saucepan. Boil gently stirring all the time. Add a teaspoonful of brandy.

The following is an extract from the *Diabetic number of the Practitioner*:

Protene Bread.

4 oz. of No. 2. protene (The Protene Co., 36, Welbeck Street London W.), 2 oz. of Butter, 2 Eggs. Beat all together thoroughly. Divide so as to form 8 small coles, Bake in oven.

Protene and Cocoanut Bread.

Mix together 1 tablespoonful of lukewarm water, $\frac{1}{4}$ oz. of German yeast, 3 tablespoonfuls of desiccated cocoanut powder. Cover and leave it in a warm place for about 20 minutes, until it is spongy; then add 3 tablespoonfuls of branprotene, a pinch of salt, 1 egg well beaten up with a little milk. Mix all well together, place it into tins, and bake for 20 minutes or longer.

Cocoanut Cakes.

1 oz. of German yeast, 4 tablespoonfuls of lukewarm water 16 oz. of desiccated cocoanut powder. Mix into a paste adding a little more lukewarm water if necessary. Leave it in a warm place for 20 minutes. Then add 2 eggs (beaten up in 3 or 4 tablespoonfuls of milk) and a little salt. Mix well. Place it into 16 small dishes or tins (well greased). Bake them in a moderate oven 20 or 30 minutes.

(Almond cakes may be made in a similar manner using almond flour in place of cocoanut flour.

Cocoanut Pudding.

$\frac{1}{4}$ oz of German yeast is mixed in a little lukewarm water with $\frac{1}{4}$ lbs. of desiccated cocoanut powder. The mixture is kept in a warm place for 15 minutes. Then $\frac{1}{2}$ oz. of butter, a pinch of salt, and a little milk are added. All must be well mixed. The mixture is placed in a pudding dish and baked in a moderate oven for 20 or 30 minutes until the surface is brown. This pudding can be eaten warm or cold.

It may be taken with custard and sweetened with saxin.

Aleuronat and Cocoanut Cakes.

2 oz of desiccated cocoanut powder are mixed with a little water containing a small quantity of German Yeast. Make a paste and keep it for $\frac{1}{2}$ hour or longer in a warm place. Thus the cocoanut paste becomes spongy.

2 oz. of Aleuronat, one egg beaten up and a small quantity of water in which a little saccharine or saxin has been dissolved are now added to the cocoanut and the whole well mixed until a paste is formed. This is spread out on a tin and divided into cakes which are baked in a moderate oven for 20 or 30 minutes.

Cocoanut and Plasmon Cakes.

Mix together 2 tablespoonfuls of cocoanut powder, a little luke warm water and $\frac{1}{4}$ oz. of German Yeast so as to form a stiff paste. Allow it to stand (covered) in a warm place for about 10 minutes, until it becomes spongy, then add 3 tablespoonfuls of plasmon, a pinch of salt, 1 tablespoonful of glycerine and one egg well beaten up with a tablespoonful of milk. Mix all together. Divide into 4 to 8 tins. Bake for 20 minutes or more.

Protene and Almond Bread.

Mix. $\frac{1}{4}$ oz. of German Yeast with 2 tablespoonfuls of luke warm water and 1 oz. of almond flour (ground almonds)

Allow the mixture to stand in a warm place for 10 minutes, then add 4 oz. of No. 2 Protene, 1 egg (beaten up) a little salt, 1 ½ oz. of butter and a little milk. Mix all well together with a fork. Divide into coles, or place into small tins and bake.

Roborat Bread.

(*Messrs. Woolley & Co. Chemist, Manchester*)

To ¼ oz. of German Yeast add 2 tablespoonfuls of luke warm water and 4 oz. of Roborat and mix into a paste with a little more water. Allow the mixture to stand in a warm place for 5 minutes, then add 1 egg (beaten up in a little water), 1 oz. of butter and a pinch of salt. Mix all together into a paste with a fork, adding a little more water if necessary. Place it into small tins and bake for 20 minutes.

Dietary for the Diabetic as sketched by Prof. Pavy.

May eat.

Butcher's Meat of all kinds.

Ham, Bacon, or other smoked, salted, dried or cured meats.

Poultry

Game.

Shell-fish and Fish of all kinds, fresh, salted, or cured.

Animal Soups not thickened, Beef-tea and Broths

The almond, bran, gluten, or other allowable substitute for ordinary bread.

Eggs dressed in any way

Cheese

Cream Cheese.

Butter.

Cream.

Greens

Spinach

Turnip-tops.

Turnips.

French Beans.

Brussels Sprouts.

Cauliflower.

Broccoli.

Cabbage.

Asparagus.

Seakale.

Vegetable Marrow.

Mushrooms.

Watercress.

Mustard and Cress.

Cucumber.

Tomato.

Lettuce.

Endive.

Radishes.

Celery.

Rhubarb.

Vinegar.

Oil.

Pickles.

Jellies and Custards sweetened with Saccharin.

Savoury Jelly

Blanc-mange made with isinglass or gelatine and cream.

Nuts of any description, except Chestnuts.

Olives.

Saccharin may be used as a sweetening agent whenever desired.

Must avoid eating

Sugar in any form.

Wheaten Bread and Biscuits of all kinds.

Rice Arrowroot. Cornflour. Oatmeal. Sago. Tapioca. Macaroni
Vermicelli.

Potatoes. Carrots. Parsnips. Beetroot. Jerusalem. Artichoke

Spanish Onions. Peas Broad and Haricot Beans

Pastry and Puddings of all kinds.

Fruit of all kinds (Lemons excepted, fresh and preserved.

May drink.

Tea Coffee. Cocoa from nibs.

Dry Sherry. Claret. Dry Sauterne Burgundy. Chablis.

Hock Brandy, Whisky, and other unsweetened Spirits.

Soda, and other Aerated Table Waters.

Light Dinner or Bitter Ale in small quantity.

Must avoid drinking.

Milk. except sparingly.

Sweet Ales, mild and old. Porter and Stout. Cider.

All Sweet Wines. Sparkling Wines. Port Wine, unless
sparingly. Liqueurs.

R. T. WILLIAMSON'S DIETETIC CHART.

Articles of Food.

Sanctioned.

Forbidden.

Butcher's meat of all kinds (except liver). Potted and preserved meats.	Sugar. Sweets and farinaceous articles of food.
Ham, tongue, bacon, poultry, games.	Pastry and farinaceous
Fish (fresh, dried and preserved) sardins shrimps.	pudding Rice.

Sanctioned.	Forbidden.
Bone marrow	Sago
Broths, animal soups and jellies prepared without the addition of sugar or starch)	Arrowroot and tapioca.
Eggs, cheese, cream	Macaroni
Butter, suet, oils and fats	Vermicelli.
Custard (without sugar).	Semolina.
Reliable bread substitute	Potatoes.
Green vegetables, salad mustard	Wheaten breads.
and cress, watercress, endive,	Biscuits.
lettuce, spinach, turnip-top cab-	Carrots turnips.
bage, croceoli, brussels sprouts,	Parsnip.
spring onion, French beans, aspa-	Beetroot.
ragus, rhubarb, cauliflower, vege-	Beans.
table marrow, tomatoes, rhubarb	Peas.
melon, strawberries, green goose-	Large onions
berries (unripe), shaddock	Liver.
Cucumber	Oyster,
Mushrooms.	Cockles.
Pickles (cucumber, walnuts and onions).	Mussels.
Nuts (walnuts, almonds, filberts, hazel nuts, brazil nuts) but not chestnut.	Puddings, crabs and
Saccharine krystallose, saxon.	lobsters.
Beverage	
Sanctioned.	Forbidden.
Water, soda, leithia, potash and seltzer water, tea, coffee, brandy in small quantity, sugar free milk.	Sweet Lamonade, Sweet Wines, most fruit
	juices and syrups.
	Liqueurs.
	Beer, Ale, Porter,
	Stout, Rum and Sweetened Gin.
	Cocoa and Chocolate
	milk in large quantities.

Diabetes Insipidus

Definition :—A chronic disease, characterised by the passage of large quantities of pale urine of low specific gravity, free from sugar, albumin and casts, and usually accompanied by an unquenching thirst.

The disease is clinically divided into two groups :

- (i, The primary or idiopathic,
- (ii) The secondary or symptomatic.

The writer has been impressed with the idea of cerebral syphilis as a cause of this affection.

Theories of diabetes insipidus :—

1. Osler remarks :—

“It results from a vaso-motor disturbance of the renal vessels, due either to local irritation, as in the case of an abdominal tumor, to cerebral disturbance in case of brain lesion, or to functional irritation of the centre in the medulla, giving rise to continuous renal congestion.”

Dietrich Gerhardt states that in the idiopathic form “the disease is due to a disturbance of the Secretory function of the kidneys and not to an increase in the thirst or to blood changes.”

Meyer remarks that primary polyuria results from an incapacity of the kidneys to secrete a urine of normal concentration : hence the diabetic insipidus patient, in order to eliminate the end-products of tissue metabolism circulating in the blood, has to imbibe large quantities of water than does the normal individual.

Treatment : -

Opium or codeia may be tried. Powdered valerian *gr. v.* three times a day is prescribed, and is gradually increased until the patient takes a total of two drachms.

Ten minims of fluid extracts of ergot thrice a day may be tried, it is frequently followed by a reduction in the amount of urine :

In syphilitic cases a course of pot iodide and mercurial inunctions is lauded to be beneficial.

Meyer holds that meat in general and specially salted meat, should be restricted.

For the thirst, the usual acidulated ærated drinks may be tried

OBESITY.

Corpulence, an excessive development of the bodily fat—an “oily dropsy,” in the words of Lord Byron—is a condition which demands judicious treatment; the tendency to obesity is often hereditary.

Most persons will hear with astonishment that there are really three kinds of fat, three forms of obesity. The thin person usually just longs for fat indiscriminately. The fat person longs to get rid of obesity simply. It would help the latter to know that their overweight is not of one kind but three.

Carl Von Noorden (*Jour. American Medical Association Oct. 9, 1909*), classifies obesity into two forms viz :—

1. Common.
2. Constitutional.

1. Common form is due to overfeeding and insufficient exercise. These lead to the formation of irritating substances in the blood, which cause a spasm of the blood vessels. This results in early structural changes in the walls of the blood vessels. The overfeeding causes derangement of the digestive organs as well as the excretory organs. When that point is reached many persons suffer from changes in the blood, which result in anæmia. Others suffer from liver and kidney complaints, gout, and apoplexy.

But it is much more difficult to explain those cases in which although the proper amount of food is taken and sufficient exercise is indulged in, obesity develops.

2. Constitutional obesity may be classified as follows :—

- (a) Primary thyreogenic obesity, dependent on actual changes in the thyroid such as atrophy, degeneration, functional weakness, and so on ; the gland situated in the neck leads to impairment of oxidation processes, of the system.
- (b) Secondary thyreogenic obesity, that is to say functional anomalies of the thyroid on the action of other organs, such as the pancreas, hypophysis cerebri suprarenals, thymus, pineal gland, and perhaps other organs also, so-called chemical correlations by means of internal secretions.

This form is mostly due to derangement of the pancreas gland in the intestines which gives out a starch-digesting fluid. This causes impairment of the oxidation processes and results in impaired nutrition of the muscles and glands. The result is the storage of carbon in the form of fat. A person in this condition is starving though he may be excessively fat. These people are feeble and anæmic and have a tendency to dropsy.

Treatment :—

The only sound treatment of obesity is that based on a reduced dietary and physical exercise, in other words, we must increase physiological requirements and diminish the intake, so as to oblige the organism to live in part on its reserves, and thus gradually restore the balance between income and expenditure. To be durable the treatment must be prolonged.

For practical purposes the treatment is divided into the following groups viz :—

- (i) Medical.

- (ii) Hygienic.
- (iii) Dietetic.
- (iv) Sinclair's plan of fasting

(1) Medical treatment :

General direction :

In every case of obesity the physician will find :

- (a) poor digestion.
- (b) improper assimilation.
- (c) deficient excretion.

Hence the rational plan of treatment will be :

- (a) to remove the cause.
- (b) to open bowels by purgatives followed by antiseptics *e.g.*, sulphocarbolates.
- (c) to promote excretion of lungs, skin, liver, kidneys, and bowels.

When you remove the real causes of the disease, the improper digestion, assimilation and excretion, Nature will remove the fat. Forced removal of fat is worse than useless — it is always harmful.

The most dangerous condition in obesity is the enervation. Rapid starvation and forced reduction increase enervation.

For primary thyreogenic obesity give to the patient 3—5grs of fresh thyroid gland with gradually increasing doses.

Discontinue it at the very first sign of some disturbance, and never go up above 15 grains a day even it is well tolerated.

Reduction in weight occurs ; when reduction reaches 20 pounds stop giving it ; after a lapse of 3 weeks continue the medicine in grain doses to keep up the efficacy of the remedy.

For secondary thyreogenic obesity try to remove the cause by suitable remedies *viz.*, pancreatic extract in pancreatic cases, adrenalin in suprarenal cases, &c.

(II) Hygienic treatment :

A glass of warm water is an excellent anti-fat remedy, it should be taken by sips early in the morning on an empty stomach.

The patient may take with advantage some mineral waters *eg*, apenta, rubinat &c., if there is a tendency to constipation.

Exercise plays an important part in the role of the disease.

Exercise has a double action—it accelerates the oxidation processes within the organism, and by, giving the muscles work to do, it tends to fix the nitrogen

The writer recommends the following :—

1. Walking.
2. Horse riding.
3. Rolling on a smooth floor several times in a line within his endurable power. The reason that rolling reduces flesh is because it stimulates the circulation, thus oxidising the blood, causing it to burn up the carbon or fatty tissue. The pressure against the hard floor is like the pressure of a hand or the mechanical pressure of some of the massaging instruments. When you roll on the floor you are giving yourself an easy massage treatment, so if you want to get thin, roll.
4. Sandow's method of exercise.

Many plans are now advised for the reduction of fat, the most important of which are those of Banting and Ebstein.

In the Banting method the amount of food is reduced, the liquids are restricted, and the fats and carbohydrates excluded.

Ebstein recommends the use of fat and the rapid exclusion of carbohydrates.

The so-called "dry cure" of obesity, will not enable us to achieve the object we have in view. At most it enables the

patient to get rid of the surplus water in his tissues, and, by restricting the quantity of fluid taken with meals, we to some extent spoil the appetite.

The Sweating process for the reduction of superfluous weight is dangerous and must be employed with caution.

This is caused by the application of a high degree of heat as in the hot and steam room. The prolonged and excessive heat increases rapid chemical changes in the body with the result that the fat is rapidly burned or melted down and gotten rid of by means of perspiration and through the kidneys. Although this method breaks down fat it also has a similar effect, but in a less degree, upon the muscles, heart, nerves and secretory glands, doing harm and often leaving the patient in a weakened and depressed condition with impaired appetite and broken sleep.

Drinks :

No water must be taken with meals

However, one should drink a glass of water one hour before or two to three hours after meals.

This is necessary to flesh and kidneys.

Hot-air and vapour baths are specially useful when the progressive loss of weight is beginning to slow down. These baths act in two ways: (1) by dehydration, and (2) by causing perspiration, which means loss of heat, thus burning up the fat.

Galen says :—

The best mode of getting thinner consists in gradually withdrawing from the body that whereof there is superfluity, and in strengthening at the same time those parts which have been expanded. Bodily exercise will, undoubtedly, prove very advantageous, as we see stout horses getting lean by heavy work. Thus, likewise, those will never grow fat who are obliged continually to toil with hard labour. This, however, requires great precaution, it being certain that fat people

frequently run danger of death when attempting violent bodily exercise. Energetic bodily exercise, a moderate life, and a diet which, although satiating, yields but little nourishment."

(III) Dietetic treatment

Forbidden :

All fat and fatty meats goose, duck, pork.

All fatty fish—as salmon, eels, &c.. &c.

All light farinaceous puddings.

Potatoes, peas, beans (except green French beans) and the like.

Butter cream, milk

All sweet preserves, all sugar with and without food.

All sweet wines and liqueurs, all beers.

(*It is also forbidden to drink during meals.*)

Permitted :

Lean meat and lean game or poultry *in moderation*.

Lean ham, tongue, and the like.

Fish without rich sauce or butter, and not of the fat kinds, may be eaten with lemon juice or vinegar.

Green vegetables cresses, lettuce, endive, and such like.

Fresh fruit in small quantity (not the highly saccharin kinds.)

A small quantity of dried toast or plain hard biscuit.

* Moritz *Four of American Medical Association, September 5th, 1908* advocates exclusive milk diet—three to five pints a day.

Its advantages are :—

(i) it relieves thirst and hunger.

(ii) it is free from salt.

Its disadvantages are :—

(i) it tends to cause constipation.

(ii) it may cause headache or backache with depression if the weight declines too rapidly.

One or two glasses of dry light wine or a table-spoonful of whisky in water after lunch and dinner.

Tea or black coffee without sugar at breakfast and tea time.

The writer could not help quoting the valuable suggestion of Burney Yoe.—

“The albuminates in the form of animal food should be strictly limited. Farinaceous and all Starchy foods should be reduced to a minimum. Sugar should be entirely prohibited. A moderate amount of fats should be allowed ”

PROFESSOR ALBU, OF BERLIN.

(*Therap des Geg*, November 1907) advocates.

The Vegetarian Treatment in Obesity

THIS treatment consists in limiting the diet exclusively to foods of vegetable origin for the most part of a coarse kind and in part raw.

It is to be remarked that vegetable foods are poor in fats, comparatively poor in albumin, and that the carbohydrates enclosed in more or less insoluble cellulose envelopes, are only assimilated in part.

The diet should consist in the main of bread, fresh vegetables, salads and stewed fruit. It is unnecessary to exclude potatoes.

The vegetable reduction cure is contraindicated in cases of complicated obesity especially in presence of digestive disturbances and a fat-laden heart.

Prof. Albu's Table.

Per cent.	Albumin.	Fats.	Carbohydrates	Calories.
Butter ...	... 0.5	... 84.6	... —	... 789
Skimmed milk ...	... 4	... 0.93	... 3.4	... 41
Soured milk ...	... 3.4	... 3.55	... 3.5	... 62
Bread ...	... 7.5 to 9	... 0.4 to 1.4	5	... 230 to 250
Boiled potatoes...	... 1.95	... 0.15	... 21	... 96
Fried potatoes ...	... 1.9	... 3.3	... 21	... 96
Potato Salad ...	... 1.6	... 9.2	... 18	... 160
Carrots ...	... 1.1	... 3.2	... 8.4	... 70
Turnips ...	... 0.6	... 2.6	... 4.9	... 47
Cauliflower ...	... 2.1	... 3.9	... 4.5	... 63
Cabbage ...	... 0.9	... 5.3	... 3.8	... 63
Sauerkraut ...	... 0.9	... 3.9	... 7.6	... 69
Spinach ...	... 3.9	... 5.7	... 5.6	... 89
Asparagus ...	... 2	... 0.3	... 1.3	... 18
French beans ...	... 2.37	... 4.17	... 3.84	... 63
Mushrooms ...	... 25.38	... 2.74	... 6.3	... 93
Endives ...	... 1.7	... 0.1	... 2.5	... 18
Cucumber ...	... 1.2	... 0.1	... 2.5	... 18
Radishes ...	... 1.9	... 1.1	... 8.4	... 43
Celery ...	... 1.5	... 0.4	... 11.18	... 58
Tomatoes ...	... 0.5	... 0.2	... 3.7	... 19
Melon ...	... 0.8	... 0.3	... 6.3	... 29
Onions ...	... 1.7	... 0.1	... 10.8	... 52
Raw apples ...	... 0.36	... —	... 12	... 51
Stewed apples .	... 0.3	... —	... 13	... 54
Raw pears ...	... 0.36	... —	... 11.18	... 50
Stewed pears ...	... 0.33	... —	... 14.4	... 72
Raw plums ...	... 0.77	... —	... 1.18	... 52
Stewed plums ...	... 0.36	... —	... 13.1	... 53
Apricots ...	... 8.49	... —	... 11	... 47
Grapes ...	... 0.6	... —	... 16.3	... 69

The following is the ideal regimen for the obese as recommended by the writer —

6 A.M. A glass of warm water or three ounces of apenta with 6 ounces of warm water to be taken by sips

7 A.M. Exercise

8 A.M. Toasted bread with little butter, or, plasmon whole meal biscuits and butter, one egg.

256 DISEASES OF THE PERVERTED METABOLISM.

10 A.M. Hand made loafⁿ, dals, vegetables : 6 ounces of plainly cooked lean meat, or cold fowl. Soups and milk should be avoided.
Dont drink during meals.

11-30 A.M. A glass of cocoanut water.

1 P.M. Skimmed or fermented milk 8 ounces.

3 to 4 P.M. Abundance of ripe fruits.

7 P.M. Toasted bread, vegetable &c.

N. B. It should be remembered that the use of alcohol, wines is one of the most common provocatives of obesity because it is a fat sparer.

IV.—Sinclair's plan of fasting.

Mr. Upton Sinclair proclaims to the world in the April "Contemporary Review" that if anyone is ill, low-spirited, too fat or too thin, he has only to fast to become perfectly well, to enjoy radiant good spirits, and to restore his body to ideal proportions.

Here is Mr. Upton Sinclair's proclamation of his great discovery.

The fast is to me the key to eternal youth, the secret of perfect and permanent health. It is Nature's safety valve, an automatic protection against disease which is the product of superfluous nutriment.

As soon as the fast begins, and the first hunger has been withstood, the secretions cease, and the whole assimilative system which takes so much of the energies of the body, goes out of business. The body then begins a sort of house-cleaning, which must be helped by a bath daily, and above all, by copious water-drinking.

Colonei Harold Brown's experiment over

The Maharaja of Durbhanga.

The Maharaja had absolutely taken nothing but water for six days, from the 30th April 1910 to the 5th of May and I

took notes each day as to his weight, girth, temperature and pulse, in order that he might not run any unnecessary risk.

He has stood the test extremely well, and at the end of the ninth day is remarkably fit. The only time at which he felt any distress was for some hours towards the end of the second day, when hunger, dizziness and general distress were marked ; but these gradually passed away and there was not much discomfort subsequently.

The following table will show the result of the six days' fast on his weight girth and pulse.

	Weight.	Girth.	Pulse.
30th April 1910 Maharajah	.. 12'8	44	„
1st May „ „	... 12'6½	42	72
2nd May „ „	· 12'4½	40½	76
3rd May „ „	... 12'4	40	80
4th May „ „	... 11'1	39	82
5th May „ „	... 11	38½	92

In conclusion active muscular exercise, restriction of diet to the proper amount, hot baths followed by a cold shower in a closed room and in addition an occasional saline laxative to clean out the entire intestinal tract, are the essential points to remember for men undertaking the reduction of excessive weight.

The dietetic rules to reduce obesity are :—

1. To eat frequently.
2. To eat light meals.
3. To eat little at a time.
4. To abstain from drinking at meals.

Rheumatoid Arthritis.

(*Arthritis Deformans*).

Rheumatoid Arthritis consists of a degeneration and destruction of the joint cartilages attended by bony outgrowths leading to great deformity. The treatment is much the same as that for chronic rheumatism.

In the general treatment of arthritis deformans two main principles should be kept in mind, viz :—

- (i) That this is a disease which tends to attack persons whose vitality is lowered and who are in popular phraseology “run down,” and that any lowering course of treatment, even if apparently beneficial for the time, tends to favour the progress of the disease.
- (ii) That any treatment, in order to be effectual, must be steadily persevered in for a long time.

Medical treatment :—

Iodides, arsenic and codliver oil, are recommended

“Guaiacol carbonate is now much used and should be given where active disease exists in doses of 5 to 10 gr. repeated three or four times a day. The writer believes it to be specially applicable where the patient is suffering from some lung complication, and the dose may be gradually increased.

“Aspirin and phenacetin give relief to pain. Iron and arsenic are probably the most useful of all drugs for improving the general health (anæmia is always a symptom of the disease and requires treatment).” Dr. Ernest A Dent (*Practitioner*, September 1909).

Nathan in an article in the *American Journal of the Medical Science* for June 1909 reminds us of the well-known fact that up to the present time the prognosis in metabolic osteoarthritis was considered hopeless as regards the recovery from the joint condition and points out that *thymus* acts as a stimulant to the nutritive processes and probably counteracts the deleterious influence of the causative condition.

The *thymus* is given immediately with two 5 grains tablets thrice daily.

In two weeks the dose is increased to three tablets and after a few months three tablets four times a day are given.

The patient is kept at rest until all symptoms of active joint disease have subsided.

The author then begins passive motion in all the affected joints.

His next step is to get the patient on his feet. Massage is unnecessary.

As soon as the patient is able to be upon his feet or use his joints without the appearance of joint irritation, all contracted tissues are divided with the tendome and the deformity corrected.

This of course requires immobilization for 3 or 4 weeks: but with light plaster-of-paris bandages it does not preclude the use of the lower extremities.

Hygienic treatment :—

1. The patient should reside in a mild climate, preferably away from the sea, for sea air usually tends to aggravate the articular and other pains.

2. Dampness of air and soil should be avoided.

3. Woolen clothing should be worn next to the skin both in summer and winter.

4. A winter residence in a warm climate in which the fluctuation of temperature is not extreme is often very beneficial.

Thermal treatment ;—

1. Hot air treatment.

2. Electric bath treatment.

Dietetic treatment :—

Diet should be light but nutritious.

Meat should by no means be avoided, but the patient should be recommended to take nitrogenous food freely.

Twentieth Century, Practice of Medicine Vol. II Page 568.

Diseases of the Digestive System:

CHAPTER IV.

STOMATITIS.

Stomatitis means inflammation of the mucous membrane of the mouth

For practical purposes it is divided into three stages, *viz.* Catarrhal, Ulcerative and Gangrenous (Cancrum Oris): Cancrum Oris is one of the worst complications of malaria and unless the pyogenic process be nipped in the bud it would surely end fatally.

The treatment divides into :—

1. Hygienic.
2. Dietetic.
3. Medicinal.

Hygienic treatment —

The mouth is the vestibule of the alimentary canal, it serves as a gathering-point for the microbes. According to Miller's estimation, one unclean mouth harbours 1,140,000,000 cultivable bacteria, many of them of pathogenic character. The infections of the mouth may play an important part in the production of disease in the gastro-intestinal tract or in other parts of the body. The gums, by the way, are the barometers of our condition. If they are clear bright and red, we are in good health; while if our blood is thin and wanting in the mysterious red corpuscles the gums will be pale and pink. The teeth are the natural grinding mills. If this dental machine be diseased the stomach will receive food in an improper way, hence every one should keep his teeth in good condition if he wants to pass his life with ease. One who never uses brushes, washes, powders or pastes in the mouth, possesses a regular cesspool of filth in the buccal orifice.

Dr. William Osler, Regius Professor of Medicine at Oxford, England, in an address to the students of the Royal Dental Hospital of London said :—

“You have just one gospel to preach, and you have got to preach it early and you have got to preach it late, in season and out of season. It is the gospel of cleanliness of the mouth, cleanliness of teeth, and cleanliness of the throat. These three things must be your text throughout life. In oral-hygiene of the mouth—there is not one single thing more important to the public in the whole range of hygiene than that, and it is with that you as practitioners will have to deal.”

(ii) Wash the mouth antiseptically each time you take your meal liquid or semi-liquid.

(iii) Remove bits of food especially meat which may harbour between the teeth by quill or silk thread passed between the teeth and under the free margin of the gums.

(iv) In case of the infants of the breast the mother should keep her nipples clean.

2. Dietetic treatment :—

(i) Carefully feed the patient on slop diet from time to time.

(ii) Plenty of concentrated liquid *eg.* Horlick's Malted Milk, Mellin's Food, Plasmon, Sanatogen, etc., must be given at frequent intervals.,

(iii) Avoid solid foods which mechanically irritate the part.

(iv) Panopepton or palatable peptone at frequent intervals.

3. Medicinal treatment :—

Antiseptic *acid* gargle is recommended by Miller.

(a) To quote the words of Prof. W. D. Miller :—

“As a mouth wash, we need above all a solution which acts quickly, and which does not simply prevent the develop-

ment of micro-organisms while it is acting, but which devitalizes them :

It is seldom that any one, in rinsing his mouth, will retain the wash longer than one minute, and an antiseptic mouth-wash, to be efficient, should be able to devitalize the micro-organisms with which it comes in contact within this short time." (*Micro-organisms of the Human mouth.*)

Prof. Miller recommends the following :—

R		
	Saccharin.	gr. x.
	Acid benzoic	gr. xiv.
	Tinc. Krameriaæ	ʒj.
	Oil. Menth pip :	mij.
	Oil : cinnamomi :	mij.
	Absolute Alcohol	ʒj.

Mft. One part of this solution to nine parts of tepid water, held in the mouth for one *minute* will effectively sterilize the oral cavity. The saccharin has been found to considerably add to the value of the wash.

(b) Antiseptic *alkaline* mouth-wash in lukewarm water has been in vogue from days of yore.

(i) Pot : chloras in solution or in concentrated tablet form is spoken off highly by authorities : its action is both local and constitutional.

The salt when swallowed is excreted unchanged with the saliva.

The writer's favourite formula :—

R		
	Pot. Chloras	ʒiv.
	Tinc. Myrrh.	ʒiv.
	Glycerine	ʒij.
	Aq. Rosæ	O.j.

Mft. one ounce of the solution with an ounce of lukewarm water for gargle.

(ii) Alkathymol, Glycothymolin, Listerine, Formalactol.

Direction of use ;—One drachm of medicine in an ounce of water for mouth wash,

2. A very excellent mouth-wash for chronic septic gingivitis is as follows :—

R

Acid Salicylic	
Acid Benzoic	aa gr. xvi.
Tinc. Krameriaë	ʒiss.
Absolute alcohol	ʒj.

Mft. a teaspoonful to a small wineglassful of tepid water as a mouthwash.

The Salicylic acid, besides being a powerful germicide has a caustic action upon the gums, and this together with the astringent effect of the rhatany, makes the wash an useful one for such cases.

3. In case of Cancrum Oris :

(i) Remove the gangrenous part by cautery or knife; swab the part with acid (pure carbolic or fuming nitric) or strong silver sol : Nargol gr. xxx in half an ounce of water.

N. B —The neighbouring mucous membrane must be protected by the application of oil and a saturated Sol of Potassium carbonate to control the extent of corrosion.

(ii) Spray the mouth with hydrogen peroxide sol from time to time.

(iii) Stop bleeding by touching the part with liq. Adrenalin 1 in 1,000.

(iv) Remove fætid odour by the application of condy's fluid to the affected part.

Internally :—

Use compressed tablet of formamint (a combination of formaldehyde with menthol and sugar of milk) every four hours to keep the buccal orifice aseptic.

The writer recommends general tonic with bark and ammonia, as follows :

℞

Spt: Ammon Aromatic :	mxx.
Tinc: Nucis Vomicae	miv.
Tinc: Cinchonæ Co.	zss.
Dec: Cinchonæ	ad. ʒj.

mft. for a dose. Sig one thrice a day.

During convalescence—

℞

Quininæ bi hydro-chloride :	gr. ii
Syr. Ferri per chloride: (P. D. & Co.)	mxx.
Liq. Arsenic Hydroch	mii
Liq: Strychnine Hydroch.	mii.
Spt. Chloroformi	mxx.
Inf. Calumba	ad. ʒj.

mft. for a dose : sig : one thrice a day.

TONSILLITIS.

Tonsillitis means inflammation of tonsils. The classical symptoms are :—

- (1) High fever.
- (2) Full bounding pulse.
- (3) Dysphagia.

Tonsils play, a very important part in admitting the various infecting microbes; They are so to speak the gateway of allowing microbic invasions. Hence a man with enlarged tonsils may be susceptible to any infective disease.

There are three clinical forms of tonsillitis. *Vis*:—

(i) Superficial in which there is a diffuse inflammation of the mucous membrane of the tonsil.

(ii) Parenchymatous in which the deeper tissues of the tonsil are affected.

(iii) Peritonsillitis in which the connective tissues round the tonsil are involved.

There are two varieties of treatment :—

1. Preventive.

2. Medicinal.

1. Preventive treatment—

Tonsillitis is certainly infectious; hence kissing should as a rule be prohibited.

2. Medicinal treatment—

i. Open the bowels by saline aperient.

ii. The writer recommends drop doses of Tinc. Aconite as follows —

R

Tinc. Aconite	mi
Liq. : Ammon Citratis	ʒii
Sodii Citrass	gr. ii
Spt. Ammon Aromatic	mx
Inf. Digitalis	ʒi
Aq. Aurantii floris	ad. ʒi

mft for a dose : sig. one every three hours

iii.

R

Sodii Salicylas	gr. iiss
— Bromide	gr. v
— Sulph	ʒ ss
Tinc : Hyoscyamus	m x
Aq : Chloroformi	ad ʒi

mft. for a dose : sig : one every four hours

iv. Guaiacum lozenges are good in parenchymatous tonsillitis.

v. Spray of medicated vapour from steam atomiser or inhalation of steam or gargling with warm water, serves the purpose of internal fomentation and thereby relieves pain.

vi. G. Fettero (*Ther. Gaz. Nov. 18, 1908*) recommends local application of aspirin over acute follicular tonsils.

A cotton-tipped probe is moistened and then dipped into powdered aspirin.

With the probe thus prepared, every portion of the tonsillar surface is carefully rubbed over. Usually three applications of aspirin at intervals of twelve hours will be found sufficient, while at the end of thirty-six hours the patient can, as a rule, swallow with a minimum of discomfort.

vii. Touch the tonsils with any of the following ;—

(a) R

Nargol	gr. xv
Aq. Distil.	ʒiv

(b) R

Tinc : Ferri perchloride	
Glycerine	aa ʒiv

(c) R

Glycerinum Acidi : Tannici	
Boroglycerine	aa ʒiv

N B—The question naturally strikes one, is tonsil to be removed when inflamed ? in reply the writer can not help quoting the following lines from Allbutt's system of Medicine P 773 vol iv 1—

“Tonsils, as a rule should not be removed when inflamed, to this rule, however, two exceptions may be given : namely when in children respiration is greatly embarrassed by the tonsillar swelling and when in adult tonsillitis has repeatedly occurred.”

Enlarged tonsils and adenoids are due to thyroid inadequacy, hence a few week's treatment with thyroid is recommended (*British Dental Journal January 1912*,)

Surgical treatment :—

1. Galvano-cautery : when the galvano-cautery is employed, the reduction of tonsils will require 6, 8, or 10 sittings, according to the degree of enlargement, at intervals of three days to a week. The amount of reduction will have to be determined on the merits of each case.

PHARYNGITIS.

Pharyngitis or inflammation of the pharynx is of two kinds :—Acute and Chronic

Acute pharyngitis :—

Open the bowel by saline aperient. A mustard plaster externally, a hot mustard water foot bath, a dose of Dover's powder at bed time and inhalation of medicated vapour through a steam atomiser are the essence of treatment

Chronic pharyngitis :—

Touch and thereby destroy enlarged granular lymphoid follicles with any of the following :—

1 Chemically.

(i) R

Resorcin	gr. x
Menthol	gr. v
Glycerinum Acidı Tannici :	ʒi

mft to apply once a day early in the morning on an empty stomach.

(ii) R

Nargol	gr. xx
Aq :	ʒ ss

To apply locally.

(iii) Trichlor-acetic acid.

(iv) Lactic acid.

(v) Liq adrenalin (I in 1000.)

2 Mechanically.

(i) Galvano-cautery.

(ii) Red hot probe.

Suck any of the following :—

(i) Eucaluptus and Menthol pestil : (Allenbury's) :

(ii) Tabloid acidi Benzoici Co :

(iii) R

Apo morphin hydroch	gr. 1/32.
Creasotal	mi
Cubeb	gr.
Menthol	gr.
Glyco. gelatin q.s.	

Mft. for a pestil : Sig. : one thrice a day.

inhale the vapours of any of the following ;—

(1) Ammon Chloride. through an atomiser.

(ii)

R

Pinol.	
Oil Eucaluptus	aa ʒi
Through a Steam atomiser.	

DYSPEPSIA.

Before describing the treatment of dyspepsia, the writer thinks it is desirable to say a few words about the *physiology of the appetite* Spriggs (*the Hospital*) remarks that there are two kinds of gastric secretions viz :—

(1) Appetite juice.

(2) Chemical secretion of juice.

The former acts generally as a stimulant for the flow of the latter.

(1) The appetite juice is poured forth on the thought (Psychical influence), sight, smell, or taste of food, independently of whether any food enters the stomach or not.

The nervous impulses which provoke its secretion, are carried to the stomach by the vagus.

Bitters, when given immediately before food, increase the secretion of the appetite juice. Pain, anger, discomfort or bad news inhibits the secretion of the juice.

- (2) Chemical secretion of juice is poured forth if the products of protein digestion artificially prepared are introduced in the stomach *e.g.* soup made by stewing meat or bones

Hence it is rational to drink soup at the beginning of a meal.

Cool water and warm fluid are excitants of gastric juice, while ice-cold water is a powerful depressant of the secretion.

Experiment has shown that if water is given before a meal it is passed out of the stomach in from 10 to 25 minutes.

It follows that loss of appetite is the harbinger of dyspepsia and bears a double penalty, viz :—

(1) loss of appetite juice.

(2) loss of chemical secretion of juice

Dyspepsia in the truest sense of the term is not a disease, it is like fever a symptom of some latent disease, it arises from the disorder in the digestive system whether functional or organic. It is induced by imperfect mastication, bolting of meals, too much fluid with meals, hard mental or physical work immediately after eating, too cold or too hot food, food badly cooked, excess of tobacco smoking, etc. Greasy and fried foods cause dyspepsia because the gastric juice cannot penetrate the coating of fat.

Pawlow observed that a dog which was the subject of a gastric catarrh produced an incessant slimy acid secretion. In such an animal a flow of appetite juice might be obtained but the second chemical secretion was not.

Spriggs suggests two lines of treatment '—

1. to arrest the incessant flow of juice periodically by bicarbonate of soda, bismuth subnitrate etc., so as to give the glands an opportunity to recover.
2. to arrange the food so that the appetite juice alone may be expected to digest it. Small meals should be given at frequent intervals.

For clinical purpose dyspepsia is divided into two varieties :—

i. **Acute Dyspepsia**

ii. **Chronic Dyspepsia**

1. Atonic dyspepsia
2. Acid dyspepsia.
- 3 Nervous dyspepsia.
4. Fermentative dyspepsia.
- 5 Irritable dyspepsia.
- 6 Dyspepsia of liver origin.
7. Dyspepsia with oxaluria.
8. Dyspepsia with uterine trouble.
- 9 Dyspepsia of scurvy.
10. Dyspepsia of the diabetic.
11. Alcoholic dyspepsia.
12. Dyspepsia of old age.
13. Pharyngitis dyspeptica
14. Uro-Kinetic dyspepsia
15. Dyspepsia Uterina :
- 16 Gallstone, colitis, chronic appendicitis, abdominal angina etc., stimulating dyspepsia.

1. **Acute Dyspepsia** is caused by too large meals, errors in diet, excess of alcohol, etc.

Treatment.—Assist vomiting by tickling the fauces: milk with sodii citras is the ideal food; the dyspepsia usually passes off in two or three days. During convalescence, give Liq. Bismuth et pepsin Co. in drachm doses after meals.

11. **Chronic Dyspepsia.**

1. **Atonic Dyspepsia** is due to deficiency of the hydrochloric acid in the gastric juice. The food undergoes butyric acid fermentation.

The indications for treatment are :—

- (a) to remove dietetic errors.

- (b) to stimulate the secretory and motor powers of the stomach, by alkalies with nux vomica, carminative and bitters before meal. Sodii bicarb acts as a stimulant to the gastric juice, increasing the secretion of hydrochloric acid and thereby aids digestion, but not of pepsin, hence it is given immediately before meal in small doses.

R. S. Lavenson in (*the Archives of Internal Medicine of september 15th 1909.*) remarks that bitter tonics taken by the mouth do not act directly upon the gastric mucosa as secretory stimulants, but reflexly increase secretion through the gustatory nerves. However disagreeable their taste may be, bitter tonics must be administered in *solution* as the stimulation of the taste organs is essential.

The following are the best prescriptions for atonic dyspepsia :—

(1) R.

Sodii bicarb	gr. x
Sodii citras	gr. vii
Inf. Cascarilla	ad ʒ. i

Mft. for a dose: Sig. Half an hour before each meal.

Burney Yoe's formula.

(2) R.

Tinc. Cascarilla	ʒ. iiss
„ Rhei	ʒ. v
„ Nucis Vomicae	ʒ. iiss
„ Gentian	ʒ. x
„ Aurantii	ad ʒ. iv

Mft. Dose—Two teaspoonfuls in water quarter of an hour before meal.

(3) R.

Sodii bicarb	gr. x
Tinc. Nucis vomicae	m. iiii
Spt. Chloroformi	m. x
Tinc. Gentian. Co.	ad ʒ. i

Mft. for a dose. Sig : To be given quarter of an hour before meal.

To aid digestion by pepsin, pancreatin, Taka diastase, papain, etc. the writer recommends the following :—

(1) R.

Pepsin	
Taka diastase	
Pancreatin	aa...gr. i

Mft. for a pill, sig : One twice a day after meal.

(2) *Enzyme Cordial*—(Corbyn :)

R.

Pepsin	gr. 1
Pancreatin	gr. ss
Diastase	gr. 1/16
Acid hydroch (Dil)	m. iii
Acid Lactic Conc.	m. 1/10

Dose :—2 to 4 fluid drachms after meal.

(3) Tryp-tase (*Oppenheimer and Sons*). Dose a teaspoonful twice a day after meal.

Writer's favourite formulæ :—

(4) R.

Elix. Papain	℥.i
Liq Taka—diastase	℥.i
Spt. Chloroformi	m.x
Essence Menth. pip.	m.x
Aq. Ptychotis	ad ℥.i

Mft. for a dose : Sig. One twice a day after meal.

(5) R.

Glycerini acidi pepsin.	℥.i
Acid Hydrochloric dil.	m.x
Tinct. Nucis vomicae	m.iv
Tinc. Cardamomi. Co.	m.xx
Aq. Carui.	ad ℥.i

Mft. for a dose : Sig. One twice a day after meal.

2. Acid Dyspepsia

(i) *Hyperchlorhydria*

(ii) *Hypersecretion.*

1. *Hyperchlorhydria* due to hypersecretion of hydrochloric acid in the stomach : pepsin remains constant in amount.

Treatment is mainly dietetic :—

Prof. Savill is of opinion that proteid diet relieves the condition, while the writer has learnt from experience that hyperchlorhydria is induced by constant proteid over-feeding.

The patient may be allowed to drink during meals, as a matter of fact, drinking large quantities of fluid helps to dilute the gastric juice. The so-called acid mineral waters, *e.g.* Fachingen, Apollinaris etc., are particularly suitable. It is claimed that the CO_2 gas that is dissolved in these waters exercises a sedative effect, and that the alkaline Carbonate that they contain helps to neutralise the excess of HCl.

(*Nothnagel's Encyclopedia of Practical Medicine. Disease of Stomach Page 319.*)

Medicinal Treatment :—

(a) Sodii Bicarb. neutralises any free acid present, therefore it is given two or three hours after food in large doses. Soda mint tabloid may be sucked an hour after meal.

The writer recommends :

(b) R.

Strontium Bromide	℥.iij
Ext. Gulancha liq.	℥.iss
Ext. Nucis Vomicae liq	m.xx.
Ext. Cascara Sag. liq.	℥.i

Dose, a teaspoonful with water twice a day after meal.

(c) Atropin Sulph. gr. $\frac{1}{100}$ tabloid.
or

R.

Atropin Methylbrom.	gr. $\frac{1}{10}$
Aq. laurocerasi.	℥ij

Dose.—20 to 25 drops to be taken at night

(d) Duboisin hydrochlorate gr. $\frac{1}{10}$ after meal.

(e) Hopogan (magnesium peroxide) relieves pain by neutralising excess of acid, and it is antiseptic. It is a white tasteless powder given in milk. Dose

20-30 grains to be taken an hour after meal. In gouty diathesis with hyperchlorhydria and fermentation it acts miraculously.

(f) Dr. Joslin (*Boston M. and S. J.*, 1898, cxxxviii., 389) has found tincture of nux vomica the only drug of value in this condition. He gives ten drops three times a day increasing one drop daily until a maximum daily dose of sixty to ninety drops is reached. At the same time outdoor physical exercise is enjoined, and massage employed where the motility of the stomach is at fault.

(g) Goodman (*New York Med. Journal* Nov. 6 1909) recommends hydrogen peroxide 1 to 2 drachms of 3 per cent. sol. in a glass of water, after meal.

(h) R_x

Sodu Bicarb	}	aa ʒi
Burnt magnesia		
with		
sugar of milk		

Dose ten grains to a drachm twice a day after meal.

(i) Olive Oil :

Dose a tablespoonful before meal or about two hours after meal. The oil coats over the mucous membrane and lessens the acid secretion.

(*A system of medicine by Osler and Mc. Crae, vol. v. Page 121*).

(j) Electricity :—

In cases of protracted nature, the direct application of the electric current to the inside of the stomach is frequently of the greatest benefit. The electricity exerts a stimulating tonic influence, not only upon the stomach, but also upon the small and large intestines.

(*Twentieth century Practice of Medicine vol. viii p. 273*)

(ii) Hypersecretion of gastric Juice :—

Classical Symtoms are :—

1. Pain or discomfort coming on some time after food, the interval being longer when protein is taken in quantity, and shorter when starches or sugars are taken.
2. Eructation.
3. Pyrosis.
4. Hunger.
5. Vomiting of a large amount of acid fluid.
6. Alkaline urine.

(*The clinical Journal*, June 22, 1910)

Treatment :—

1. Alkalies are given before the onset of pain.
2. Fluids are drunk an hour before meal.

In hypersecretion the patient should be advised against drinking too much ; because the ingestion of large quantities of fluid seems to favour vomiting.

(*Nothnagel's Encyclopedia of practical medicine. Disease of stomach P. 332.*)

3. Very hot and very cold food and drinks must be avoided.

3. **Nervous dyspepsia** depends upon the disordered condition of the nerves of the stomach.

- (a) Ext. sumbul liq. acts admirably in this form.
- (b) Cocaine hydrochlor gr. $\frac{1}{4}$ given three times a day in milk will cure the disease.
- (c) Chloretone gr. 2 dissolved in water has cured a case under writer's treatment like a charm.
- (d) Bromides and valerianates relieve gastric hyperæsthesia due to nervous irritation.

(c) Cold water treatment

1. A glass of cold water to be taken by sip early in the morning

4. Fermentative dyspepsia is due to fermentation.

The writer's well-tried prescriptions are :—

(a) R.

Sodii Sulpho-carbolas	gr. iiii
Tinc. Nucis Vomicae	m. iv
Tinc. Carminative	m. x
Inf. Calumba	ad ʒ. i

Mft. for a dose. Sig. One quarter of an hour before meal.

(b) R

Benzo-naphthol	gr. ii
Taka diastase	gr. ii
Sodii Bicarb	gr. v
Pulv. Carb. Lig.	gr. v

Mft. for a pulv. Sig. To be given in wafer paper twice a day after meal.

5. In irritable dyspepsia arsenic in drop doses before or after meal acts well.

R

Liq. Arsenicalis	m. iiii
Potas Bicarb.	gr. x
Inf. Calumba	ad ʒ. i

Mft for a dose. Sig. One twice a day after meal.

When pain is the urgent symptom use the following :—

(a) R

Bismuthi Salicylas	gr. v
Pulv. Tragacanth Co. q. s.	
Acid Hydrocyanic Dil	m. i
Liq. Opii sedativus	m. iv
Aq. Aurantii floris	ad. ʒ. i

mft. for a dose : sig. One thrice a day.

(b) Heroin hydrochlor. gr. $\frac{1}{2}$ tabloid once or twice a day.

6. In dyspepsia of liver origin, bryonia acts well.

7. In dyspepsia with oxaluria, nitro-muriatic acid with nux vomica and bitters is very efficacious

8. For dyspepsia with uterine trouble, drop doses of laudanum with nux vomica and other uterine sedatives are good.

9. For dyspepsia of scurvy, lime juice and pepsin a drachm or two to be diluted with cold water twice a day after meal.

N. B.—Lime Juice and pepsin (*P. D. & Co*). Dose a teaspoonful with an ounce of water after meal.

10. Dyspepsia of the Diabetic :—

(a) *Cellasin* is a hardy and powerful metabolic ferment active upon sugar starch and fats in an alkaline medium at body temperature.

It is indestructible by acids or by other ferments.

The formula of Tablet No. 2.

R

Cellasin	gr iiiiiss
Sodii Bicarb.	gr. iss.

Dose 2 to 6 tablets half an hour after meal.

It is prepared by Mead Johnson & Co.

(b) Taka-diastase ;

It is to be given in powder form in capsules, 5 grains after meal twice a day.

11. Alcoholic dyspepsia :—

Tinc : Capsicum drop dose with Nux. Vomica, Spt. Ammon Aromatic and a bitter to be taken half an hour before meal.

12. Senile Dyspepsia :—

In the treatment of senile dyspepsia Dr. W. S. Fenwric in (*the Lancet of Nov. 6th 1909.*) recommends the following :—

(1) Mastication must be performed in an efficient manner ;
new teeth should be inserted when necessary.

- (2) Use antiseptic gargle
- (3) Avoid exposure to cold.
- (4) Avoid tea, broths and soups as fluids always increase the tendency to flatulency ; but only a small quantity of hot water may be allowed at the end of the principal meal.
- (5) Avoid sweet preparations as they are apt to excite gastric fermentation.
- (6) Avoid green vegetables and raw fruits as they always increase the indigestion.
- (7) Avoid fat and fatty substances in advanced cases as they are apt to produce nausea and diarrhoea.

The main indications for medical treatment are ;

- (i) To correct the subacidity.
- (ii) To relieve the flatulence and constipation.
- (iii) To promote digestive power

The writer recommends the following :—

- (1) Glycerine acid pepsin with dilute hydrochloric acid in gastric dyspepsia.
- (2) Maltine and taka diastase in intestinal dyspepsia.
- (3) The administration of lactic acid bacilli in the form of Metchnikoff's Soured milk.

13. Pharyngitis Dyspeptica—

Imhofer (*Mittlg. des Verein. Karlsbader. Acrzte*) points out a form of pharyngitis which occurs in disturbances of the digestive organs, and was observed by him in 21 instances. It is characterised by varicose vascular dilatation at the posterior pharyngeal wall, swelling of the mucosa, sometimes a livid discoloration. The chief symptoms consisting in a burning sensation and the sensation of a foreign body, are increased after meals, in contradistinction to ordinary pharyngitis, in which the symptoms usually show a certain remis-

sion after eating. Varicose hypertrophy of the lingual tonsil belongs to the same group of cases. The treatment can only consist in the correction of the disturbance. Local measures are entirely unsuccessful with anæsthetics, which however may be given with a trial.

14. Uro-kinetic Dyspepsia :—

Dr. Rosenberg (*Deut. med. woch Aug 1899.*) describes a variety of dyspepsia which he terms "Uro-kinetic" dyspepsia, due to something wrong with the motor apparatus of the urinary tract. The patient usually suffers from enlargement of the prostate with secondary gastritis set up by retention of urine.

Treatment :—

Attend to the state of the urinary apparatus of the patient.

15. Dyspepsia Uterina—

It is dependent upon diseases of the female reproductive organs and uterine displacement, and occurs without organic change in the digestive apparatus.

16. Gallstone, colitis, chronic appendicitis, abdominal angina etc., stimulate dyspepsia.

Treatment :—

Reduce blood pressure as it is flowing through thickened peripheral arteries :

Dr. R. Hutchison (*Brit. Med. Journal 29th Feb. 1900*) recommends Urotropin :

Hygienic treatment :—

Rest in the beginning ; later take systematic exercise, change of air, sea voyage or spend summer in mountain.

Abdominal *massage*, when skillfully done, strengthens the motor power of the stomach, aids peristalsis, and stimulates the venous circulation.

Lavage may be practised when other means fails. Physician should bear in mind the undermentioned important points, *viz* :—

- (a) Time taken by the patient at the meals.
- (b) Quantity and quality of food the patient eats.

The writer recommends his dyspeptic patients to chew each morsel as many times as there are teeth in his mouth before swallowing. By this simple method he has cured several cases where there was objection for allopathic system of treatment. Chinese system of taking meals slowly seems to be scientific.

Agreeable odours exercise a highly beneficial effect on digestion, a fact long known to the Hindus.

Dietetic treatment .—

Dietetic errors are the fruitful source of dyspepsia and gastritis, too frequent meals, habitual overfeeding, and irregularity of the meals will in time derange any stomach : deficiency of food and long restriction of food induce dyspepsia.

In acid dyspepsia, Prof. Osler recommends strictly meat diet as follows :—

3½ ounces of meat minced fine, taken raw with two slices of stale bread and 1 ounce of butter, with one glass of Apollinaris water thrice daily.

Professor Savill remarks that proteid diet with a course of galvanism, is very efficacious. Dr. Ernest Young in *the clinical Journal* recommends hot water and minced meat diet in atony and dilatation of stomach and in chronic hyperchlorhydria :

1. Hot water will tend to cleanse away existing catarrh, and help to dissolve and so render easy of elimination any toxic material in the intestine,

- 2 Minced meat contains a maximum of nourishment with a minimum of weight and bulk :

{ 1. oz meat gives 35 heat units. Dose 2. ozs at a time
 { 1½ pint of milk gives 510 heat units. Dose 2 ozs
 { a time.

Dr. Herscheel (*B. M. J.* 1898 *Vol. II* pages 1323) on the other hand suggests carbohydrate diet partially dextrinised by Taka diastase and large doses of alkalies to neutralise hyperacidity.

The writer recommends the following :—

1. Raw papaya boiled in water.
2. Pine apple juice aids digestion.

Fresh pineapple Juice in dyspepsia —

It is capable of digesting animal tissues, picking out nonliving proteins and rapidly digesting them, and leaving behind all living tissues

It is superior to pepsin in that it is not nauseating, is more easily obtained in India, and acts promptly in almost any kind of medium and variation of temperature.

It is superior to trypsin and vegetable proteolytic enzymes in that it is more palatable and readily obtained in the most active condition.

3. "Banana" fruit as food
- 4 Somatose
5. Milk.
 - (a) Milk with sodi citras
 - (b) Fermented milk
 - (c) Peptonised milk.
 - (d) Cider whey. Add equal part of Devonshire cider to fresh milk ; keep it till curd is formed , remove the soft curd. It is used in nervous and fermentative dyspepsia.

- (e) White wine whey Add three ounces of pure sherry to a pint of boiling milk, remove the curd. It is used in obstinate dyspepsia.

No definite list of food can be prescribed. "One man's food is another man's poison." However the following is an ideal menu of diet as prescribed by the writer in most obstinate cases of dyspepsia :—

EARLY IN THE MORNING—6 ozs. warm water to be taken by sips ; it prevents fermentation and washes out the stomach.

8 A. M.—Juice of '*helancho*' and raw milk each half a chattack.

9-30 A. M.—Good cold shower bath.

10 A. M.—Rice '*dad khani*' or '*basmati*' to be boiled in coconut water on a slow fire ; wash the warm rice in water and serve to eating. Boiled banana fruit and raw papaya , soup of '*gadhal*' herbs ; fried '*mourala*' fish ; soup of black fish '*koi*,' '*magur*' '*singee*,' milk and rice with '*katali*' plantain.

Drink little or better no water during the meal.

When meal is over, lie on the left side for half an hour so that the food may lie long in the fundus of the stomach.

No mental or physical labour at least half an hour before or after the meal, to have the full benefit of more blood in the abdomen which indirectly aids digestion.

11. A. M.—A glass of fresh coconut water ; where it is not available, a glass of soda water is a good substitute.

2 P. M.—Milk, or better fermented milk or fresh curd.

4 P. M.—Fruit juices of papaya, pomegranate, oranges, grapes, etc.

7 P. M. — Barley bread, 'mung' soup, fish soup, milk

Sweets forbidden except 'palm *misy*' and 'cocoanut *gure*.'

'*Balam*' rice causes acidity, therefore not allowed in dyspepsia.

9-30 P. M. — Patient should go to bed.

N. B. — In conclusion it must be impressed upon the patient to masticate the food thoroughly, to eat slowly, not to think of business during meals and to stop eating before the sensation of satiety appears.

GASTRIC ULCER.

Frequency. — Gastric ulcer is found in 5% of all autopsies.

Definition. — A necrobiotic process beginning in the gastric mucosa consequent upon impaired nutrition and autodigestion with tendency to involvement of muscular and serous coat.

This does not include malignant, tubercular or syphilitic ulceration.

For clinical purposes, ulcer of the stomach is usually divided into the acute and chronic form. It would seem to me that the same pathology is at work in both, and the chronic form is only an advanced stage of the acute uncured.

W. G. Mayo says :—"Mechanical injury of pyloric portion and excessive acidity of the gastric secretions under anæmic conditions give rise to ulcer." Anæmia seems to play an important part.

The changes which affect the stomach in this condition are chiefly epithelial abrasions. There is nothing in the early stage which could be called ulcer. The abrasions are hardly visible and are only demonstrable by microscopical section, but they are sufficient to give rise to hæmorrhage.

The ulcer is usually single and generally situated on the posterior wall near the pylorus on the lesser curvature.

The cardinal symptoms are:—

1. Localised pain, aggravated by food but relieved by vomiting
- 2 Vomiting
- 3 Hæmorrhage.
4. A tender spot on the epigastrium.
5. Rigidity of the overlying muscles

The treatment is grouped under the following heads:—

1. Prophylactic
2. Hygienic.
3. Dietetic.
4. Medicinal
- 5 Surgical

1. **Prophylaxis** —Gastric ulcer occurs frequently in young chlorotic women. Regulate diet and avoid very hot food, coarse food, food rich in acid and condiments which irritate the mucous membrane of the stomach: tight lacing is forbidden.

“Alcoholic stimulants, much vegetables, stomach tube, and heroic doses of Bismuth may set up vomiting and diarrhœa.”

(*Julius dreschfeld*)

Alcohol is particularly contra indicated in this disease. It tends to stimulate the stomach, to increase the secretion, and to excite the circulation, and in all its aspects it is unfavourable to the healing of gastric ulcer

2 **Hygienic treatment:**—“Rest cure”—Rest of the stomach is indispensable, feed the patient with nutritive enema; rest of the body in general is absolutely necessary by allowing the patient to lie on a recumbent posture

Give **Physiological** rest to the stomach by withholding food and fluid, but there is a difficulty in withholding fluid, and

it is important to withhold fluid because of the disturbances which are brought about by the distension of the stomach when fluid is taken. The stomach expands and pulls upon the ulcer, thereby retarding the process of recovery. Further, if anything is put in the stomach the effect is to stimulate the secretion of gastric juice, and it is this acidity which the food provokes—not the food itself—that causes the irritation and the trouble. Another disturbing process is peristalsis. If we can exclude distension, acidity, and peristalsis, leaving the ulcer completely at rest, it is capable of healing very rapidly indeed.

3. Dietetic treatment :—When the diagnosis of gastric ulcer is certain, stop food by the mouth and feed the patient with nutritive enema for 3 or 4 weeks as follows :—

Rectal feeding for the first week.

I. Peptonised milk, 6 ozs. each time, three or four pints within 24 hours,

II. To a pint of milk add brandy 2 ozs. and one raw egg.

III. R

One egg.	
Panopepton	ʒi
Peptonised milk	ʒiv

Mft. for a dose : sig. per rectum E. 4 hours.

IV. Peptonised milk gruel. (*Allbutt's system of Medicine Vol. iii, Page 543*) Mix well milk 10 ozs. and one egg, then add 2 teaspoonfuls of Benger's liquor Pancreaticus, and 30 grains of sodii bicarb.

V Leube prefers the "pancreatic meat emulsion" for rectal feeding.

(*Burney yoe's book on food in Health and Disease. P. 545*)

VI. Dujardin-Beaumetz recommends :—

(1) Yolk of an egg.

Two tablespoonfuls of liquid peptones.

5 drops of Laudanum.

A glass of milk.

(ii) Two eggs.

Two drachms of liq. Pancreaticus.

20 grains of Sodii bicarb.

30 grains of Sodii chloride.

Half an ounce of Brandy.

Little sugar.

Four ounces of warm milk

V.B. 1.—Somatose and sanatogen are favourite additions to nutrient enema. It should be given warm about 98° to 100°F.

2. Bowel should be washed out once daily before nutrient injections are given.

3. No reliance should be placed on nutrient suppositories

(Burney yeo's manual of medical treatment Vol. 1 Page 44).

After a week prescribe the following orally.

(i) Flour soup boiled with milk. Casein coagulates in smaller flakes than in pure milk.

(ii) Soured milk.

(iii) Meat Jelly.

Boil a chicken with calves' feet.

(iv) Panopepton.

(v) Raw beaten white of egg.

White of egg like the casein of milk, seems to possess the power of combining acids, and even of neutralizing them.

(Von Pfungen)

(vi) Sugar Solution

Strauss remarks that the secretion of acid in the stomach is smaller in amount, It is contraindicated in all cases where there is a tendency to fermentation.

Subsequently prescribe two or three pints of milk by mouth within 24 hours, but never more than a small teaspoonful at one time ; afterwards, food should be easily digestible and not irritating.

The following is the ideal menu of diet as recommended by Professor Osler :—

8, A. M.—200 c. c. of Leubo's beef solution.

12, NOON.—300 c. c. of milk gruel of peptonised milk. The gruel should be made with ordinary flour or arrowroot and mixed with an equal quantity of peptonised milk.

4, P. M.—Beef solution again.

8, P. M.—Milk gruel or butter milk.

Lenhartz diet chart.

Small quantities of beaten-up eggs and milk, the quantities being increased day by day *i. e.* on the first day 7 to 10 ozs. of milk with one egg, and the increase is $3\frac{1}{2}$ ozs. of milk each day and one egg each day until a quart of milk and six to eight eggs are ingested. An ice-bag is kept constantly applied to the epigastrium.

After the first week soft boiled rice, minced meats, semi-solid and solid foods are gradually allowed ; of course the amount of meat first given is only two ounces.

This plan of treatment should persist in for at least a month.

The advantages are :—

- (1) Pain as a rule disappears entirely within 48 hours.
- (2) Vitality of the patient is maintained and healing processes are therefore carried on more rapidly.
- (3) The weight is usually increased.

The clinical Journal June 24 1908 contains the following :—

Stop food for 4 to 6 hours : Then prescribe :

1. Whey or alum whey :—

R

Alum	3i.
Boiling milk	oj.
Strain through muslin.	

Dose a teaspoonful every now and then.

Hort (*Brits Med. Journal* oct 10 1903) recommends antilytic serum in chronic gastric and duodenal ulcers. The object being to re-establish a condition of immunity of the gastric mucosa to the action of gastrolytic toxins and enzymes which are responsible for ulcer production and maintenance.

The ulcers fail to heal because the thickened floor of the ulcer prevents healthy lymph penetrating to the ulcer.

This lymph contains various bodies, some of which apparently antagonize enzymes from fixed cells, from wandering cells and from bacteria, and thus limit cell-destruction either auto-lytic or heterolytic.

These antilytic substances can be applied in the form of horse serum or specially prepared antilytic serum.

It is given by the mouth 3 or 4 times a day directly after food in half an ounce of water. The serum must be fresh, atoxic and sterile.

Dr. Willcox, of St. Mary's Hospital London (*The Quarterly Journal of Medicine* for October 1902) formulates the following table.

Hcl may exist as :—

- | | |
|--|-----------------------------|
| (i) Free hydrochloric acid— <i>i.e.</i> the acid is not combined with any case either inorganic or organic. | } Active hydrochloric acid. |
| (ii) Hydrochloric acid which is combined:— | |
| (a) With proteins. | |
| (b) With other nitrogenous organic bases. | |
| (iii) Hydrochloric acid which is combined with inorganic bases to form neutral salts— <i>e.g.</i> sodium chloride. | |

N B.—In gastric ulcer the 'active hydrochloric acid' is markedly increased and free hydrochloric acid is present in excess.

This condition is commonly spoken of as hyperchlorhydria.

Now let us avail ourselves of the opportunity by :—

1. The administration of alkalis *e.g.* Sodii bicarb Bismuthi Subnitras etc., to neutralize the excess of acid
2. The administration of diet rich in easily assimilated proteins *e.g.* eggs, milk. Lenhartz took advantage of this fact and prescribed the diet list accordingly
3. The administration of ferruginous preparation *e.g.* dried Sulphate of Iron which uses up excess of Hcl by forming an albuminate and a chloride compound ; moreover it relieves anæmia.

Treat the patient symptomatically:—

- (a) **Hyperacidity** is diminished by alkalis
- (b) **Pain** is relieved by hot linseed poultice to the epigastric region. The writer recommends the following :—

R

Menthol	gr. $\frac{1}{4}$
Cocainæ Hydroch	gr. $\frac{1}{4}$
Heroine Hydroch	gr. 1-12
Cerri Oxalas	gr. 1
Ext. Lupuli	gr. $\frac{1}{4}$
Or Ext. Belladonna.	

Mft. for a pill. Sig. one thrice a day,

N.B.—Belladonna (1) is a local anæsthetic,
 (ii) diminishes secretion of stomach,
 (iii) diminishes peristalsis,

R

Chloretone	gr. ii
Cerri Oxalas	gr. 1
Bismuthi Subnitras	gr. x

Mft. for a pulv. Sig : To be given in a wafer paper twice a day.

(c) When **Vomiting** is persistent, exclusive rectal feeding is indispensable.

1 Drop doses of hydrocyanic acid with bismuth and cocaine are recommended.

2. Inhalation of oxygen

How it acts is difficult to explain. The continued inhalation of oxygen will check almost any vomiting, and for cases of gastric ulcer in which one is unwilling to give drugs the oxygen inhalations are particularly useful,

3. Chloretone dissolved in glycerine.

(d) For constipation saline aperient early in the morning, and enema of tepid water in the evening.

(e) For **hematemesis** absolute rest in bed in a recumbent posture. "A fatal result is not very common from hæmorrhage"—Osler. Avoid all food by the mouth.

After hæmorrhage the next grave matter to bear in mind is the possibility of perforation of an ulcer, with alarming symptoms of pain and collapse, calling for immediate surgical action.

Hypodermically :—

(i) Morphine gr. $\frac{1}{4}$ hypodermically.

(ii) Ergotin gr. $\frac{1}{4}$ injected subcutaneously.

(iii) Prof. Fulton in his book of the *Diseases of the Digestive canal*. P. 125 recommends subcutaneous injection of gelatin.

Locally :—

(i) Icebag over epigastrium.

Internally :—

(i) Adrenalin 1 in 1000 mixed in iced saline water.

(ii) Calcium lactate gr. 5.

(iii) Turpentine in the shape of terebene, 10 drops beaten up with white of an egg acts miraculously when other medicines have failed.

- (iv) Gelatin given by the mouth is of questionable value; it has been given frequently with fruit juices. Hesse gave 19 per cent gelatin solution per mouth.

Gelatin has been given by the mouth, one tablespoonful of a 10 per cent. solution every two hours.

(*Burney yeo's Manual of Medical treatment vol I. P. 142*).

Per rectum :—

15 grs of Calcium lactate dissolved in 10 ozs. of water every four hours per rectum as the trouble from hæmorrhage can so be readily met.

- (f) If the patient is thirsty.

- (i) Suck little ice.
- (ii) Wash out the mouth with hot water.
- (iii) Inject water into the rectum.
- (g) If there be tendency of collapse.
- (i) Hot saline water injected per rectum from time to time.
- (ii) Transfusion of saline solution
- (iii) Strychnine gr. 1/64 hypodermically.
- (iv) Brandy and hot water per rectum.
- (v) Hot bottles over the extremities.
- (vi) Limbs should be bandaged.

5. **Surgical Treatment** :—Excision of the ulcer is the ideal operation according to many distinguished operators. It is gratifying to quote the words of a great surgeon like Kocher :—

“The majority of practitioners do not sufficiently realize what brilliant results are to be obtained by operative means in chronic affections of the stomach commonly known as gastric catarrh. Not only can the numerous dangers of ulcerating affections of the stomach, such as hæmorrhage, perforation and transition into cancer be prevented, but the disease and its results may be so rapidly and certainly cured that the

medical treatment of obstinate cases must be put in the background. The pain in the stomach disappears immediately after operating. The patient does not require to pay any further attention to the nature of his food. The vomiting disappears. The bowels become regular. Repeated investigation of the gastric contents shows that there is a progressive improvement in the process of digestion."

DUODENAL ULCER.

For acute cases with hæmorrhage, subcutaneous injections of sterile normal horse serum and feeding by the mouth at the very earliest opportunity with small dry meals, mainly of meat are recommended.

Dr. Einhorn in the *American Journal of the Med. Science*. Aug. 1909, classifies the disease under two headings :—

1. Mild case.
2. Grave case.

1. In the mild cases regulation of diet (*frequent small meals, abstention from highly-seasoned substances, acids and too fatty foods*), improving the general condition by means of iron, arsenic, cold sponging, good air, avoidance of bodily exercise and the use of alkalies are sufficient to effect a considerable amelioration if not a cure.

N. B.—If mild case threaten to be a severe one olive oil (*two tablespoonfuls morning and evening*) seems to be of service.

2. In **grave cases** a strict ulcer cure with rest in bed and rectal alimentation and afterwards fluid diet must be instituted.

In these cases large doses of magnesia and bismuth are of benefit.

R

Calcined magnesia	gr. viii
Bismuthi subnitrate	gr. xxx

M.ft. for a pulv, sig. one three times a day half an hour before meal.

If a strict rest cure has been unsuccessful, or if we have to deal with severe hæmorrhage endangering life, and returning frequently, or if obstinate spasm of the pylorus occurs associated with severe pains in the pyloric origin and slight peristaltic restlessness of the stomach, an operation (*usually gastroentrostomy*) is indicated.

Guthrie Rankin (*British Medical Journal July 23, 1910*) recommends the following two combinations :—

(i) In early stage of the disease.

R

Bismuthi carbonate	gr. xxxxx
Acid carbolic (pure)	gr. ii
Liq. morphinæ hydroch	m. xv
Mucilage acacia. qs.	
Inf. gentian Co.	ad. ʒi

M.ft. for a dose Sig : to be taken in water from 2 to 3 hours after every meal.

(ii) During convalescence.

R

Finkler's papain	gr. ii
Acid carbolic	gr. ii
Strychnine	gr. 1/30
Codeia	gr. ¼
Ext. Rhubarb	gr. ¾

M.ft. for a pulv. to be put in a capsule and taken after meals three times a day.

For **chronic cases** prescribe full meat diet in an appropriate form from the start, with repeated oral doses—never on an empty stomach—of an antilytic serum specially prepared

Hort (*Brit Med. Journal Jan. 8, 1910*) remarks ;—

1. Starvation.
2. Semi-starvation.
3. Milk.
4. Egg.
5. Slop treatment.
6. Lenhartz diet.

GASTRALGIA.

Gastralgia or Neurosis of Stomach is characterised by :—

1. Pain and other sensory perversities.
2. Bulæmia *i.e.* ravenous craving for food ; it depends upon an affection (*temporary or organic*) of the vagus.
3. Vomiting.
4. Flatulence.
5. Neurasthenia.
6. Motor disorders *e.g.* gurgling etc.

Treatment is of two kinds :—

- I. *Immediate relief,*
 - II. *General treatment*
1. **Immediate relief.**
 - (i) In neurotic anæmic women—iron and arsenic afford ready relief.

The writer recommends *Arsenioferratose*, drachm dose twice a day after meal or *Sol. Ferri et Manganese peptonate* with arsenic drachm dose twice daily after meal.

- (ii) In elderly women, the following combination acts well.

R

Acid Hydrocyanic (Dil.)	m. i
Liq. opii sedativus	m. vii
Aq. Cinnamomi	℥. i

M.ft. for a dose. Sig : one thrice a day.

Warmth of abdomen and mild counter-irritation over the epigastrium are good.

Somatose is an excellent diet.

Rest both physical and mental is indispensable.

Acids, alkalies, bitters, pepsin, pancreatin and predigested food are not necessary. Alcohol is a dangerous remedy in neurotic persons.

- (iii) If vomiting be the pressing complaint :—

- 2 Chlorobrom.
- 2 Bromide and hydrocyanic acid mixture.
3. Cærium oxalus effervescence, drachm dose when required.

- (iv) If pain be acute :—

1. Solanin 5. c. grammes half an hour before meal in a pill form.
2. Writer's favourite formula.

R

Heroine hydrochlor	gr. 1/12
Cocaine hydroch	gr. ¼
Menthol	gr. ¼
Ext. Lupulin	gr. ii

M.ft. for a pill Sig. one twice a day.

- (v) Prof. Ewald recommends Bornyval (*combination of borneol and valerianic acid* ; it is given in capsules on a full stomach and is usually well borne.

- (vi) "Riforma Medica" of March 18th, 1900 recommends :—

R

Chloral hydrate	gr. iii
Sodii hypo-sulph	gr. vi
Aq. Menth pep	℥. i

M.ft. to be taken alone and repeat if necessary.

- (vii) J. M. Anders advocates the use of guaiacol, it allays the irritability of nerve terminations :—

R

Guaiacol	
Glycerine	a' a ℥. i
Aq. Menth pep	ad. ℥. iiss

Dose :—A teaspoonful every four hours.

- (viii) John Aulde lays down the rule that "the smallest dose of Arsenic given at short intervals, under proper restrictions, will prove most efficient, while it removes entirely the element of danger" and recommends 1/10 of a drop of Fowler's solution every ten minutes for an hour or $\frac{1}{2}$ drop or less every hour.

Clerk recommends drop doses of liq. arsenicalis before meal ; it is an excellent medicine in gastralgic pain of nervous origin.

II. General Treatment :—

Put the patient to bed : regulate diet. Bland diets well-cooked and in small quantities are recommended.

DILATATION OF STOMACH.

In the treatment of Gastrectasis physician should keep in his mind the maxims as laid down by Prof. T. Clifford Albutt M. D. viz :—

1. Stomach has overworked and irritated, hence physiological rest is indispensable.

2. Secretion and motor activity of stomach have failed, hence the necessity of stimulants.
3. Food is delayed in the stomach and undergoes fermentation.
4. The viscus consequently is dilated.

Ewald estimates the maximum normal capacity at 16,000cc.

(56 oz. = nearly three pints.)

There are two kinds of dilatation viz :—

1. *Obstructive.*
2. *Atonic.*

1. **Obstructive dilatation** is due to thickened pylorus, puckering of a cicatrix, torsion, etc.

The stomach dilates on account of stenosis but there is no impairment of gastric secretion and motor innervation.

Treatment is Surgical. Remove the seat of obstruction.

2. **Atonic dilatation** :—

In atonic dilation as a result of toxic condition *e.g.* acute rheumatism, tuberculosis, septicæmia etc. gastric juice is more or less suppressed.

Stop food by the mouth and feed the patient per rectum for a couple of weeks.

By the end of first week meat and fruit juices are allowed by mouth.

Subsequently malt extract and peptonised milk are prescribed.

The following methods of treatment are recommended :—

1. Lavage of the stomach with luke warm water early in the morning is a valuable agent.

2. Massage is a potent factor to restore the qualities of gastric juice.
3. Electricity.
4. Hydropathy.
5. Drugs :—

(i) R̄

Acid Hydrochloric, (Dil)	m. v
Glycerine acid pepsin	ʒ. i
Liq. Strychnine hydrochloride	m. v
Spt. Chloroform	m. x
Aqua Carui	ad ʒ. i

Mft. for a dose Sig. one twice a day after each meal.

(ii) Taka-Diastase and strychnine tablet (*P. D. & Co*) ;
one after each dose.

(iii) R̄

Papain.	gr. ii
Taka-Diastase	gr. ii
Pancreatin	gr. i

Mft. Sig. one to be given in a wafer paper after meal.

(iv) Predigested food :

(v) Magnesium-Perhydrol Tablets (*Merk's*) $7\frac{1}{2}$ grains (25%).

Dose.—1 tablet 2 to 3 times daily, in water. The therapeutic action of Magnesium-Perhydrol is due to the liberation of **Active Oxygen** within the system.

Dilatation of Stomach with fermentation.

Sir. W. Broadbent's formula.

R̄

Sodii Sulphite	gr. v-x
Sodii Bicarb	gr. xx
Tinc. Nucis Vomicae	m. iv
Aq Chloroformi	ad ʒ. i

Mft. for a dose sig. one to be taken between meals when the gas eructed has the odour of Sulphuretted hydrogen.

The writer's favourite formulæ :—

(1)

R

Sodii Sulphocarbolas	gr. iii
Sodii Citras	gr. v
Spt. Chloroformi	m. x
Tinc. Carminative	m. x
Aq. Ptycotis	ad ʒ. i

Mft. for a dose Sig. one twice a day half an hour after meal.

(ii)

R

Resorcini	gr. ii
Glycerine	m. xii
Nepanthe	m. v.
Aq. Carui	ad ʒ. i

M.ft. for a dose. Sig. one twice a day between the meals.

(iii)

R

Bismuth Salicylas	gr. v.
Bismuth Carb.	gr. x.

Mft. for a pulv. Sig. one twice day.

Bismuth absorbs sulphuretted hydrogen and is eliminated in the form of black sulphide.

During convalescence Prof. Osler recommends Iron, Ergot and Strychnine.

Dietetic treatment.

Liquids by mouth to be restricted during 'digestion ; thirst is relieved by injecting liquid into the rectum.

- 1 Allowed—Dry, easily digestible plain food in small quantities, jellies, minced meat, chicken, fishes, plasmon biscuit, eggs, cream, carbohydrate in small quantities, cognac or whisky with little soda water.
2. Forbidden—Tea, coffee, vegetable in excess, fat, liquid by mouth during meal.

The following is the ideal menu of diet as prescribed by the writer during the stage of convalescence

EARLY IN THE MORNING.—10 to 15 grs. of sodiu sulph. in 6 ozs. of hot water for 2 to 3 weeks. Old long standing cases are claimed to have been cured in this way, through a simultaneous improvement of both the motility and secretion (*Prof. Simon.*)

7 A. M.—Plasmon Biscuit.

9 A. M.—Massage of abdomen with pure mustard oil for half an hour

9-30 A. M.—Cold bath.

10 A. M.—Rice.

10-30 A. M.—A dose of medicine as prescribed above

12 NOON.—Cocoanut water.

2 P. M.—Fermented milk, whey.

4 P. M.—Fruit juice.

6 P. M.—Fried vegetable, toasted bread, milk, etc

6-30 P. M.—A dose of medicine

9-30 P. M.—Sleep.

APPENDICITIS.

Appendicitis consists of a catarrhal inflammation of the Vermiform appendix which may go on to ulceration, localised peritonitis or perforation. Intestinal concretions, undigested food and seeds may impact here and start inflammation which may extend to the Cæcum (*typhlitis*) or the surrounding tissues (*peri-typhlitis*.)

The cardinal signs and symptoms of acute appendicitis may be grouped under five heads

1. Abdominal pain.

2. Nausea and vomiting.
3. Tenderness and rigidity of the abdominal wall.
4. Elevation of temperature and acceleration of the pulse rate.
5. Inflammatory leucocytosis, *i.e.*, with a relative increase in the polymorphonuclear cells. Murphy placed much diagnostic value on their occurrence in the above order, and wrote, "When that order varies I always question the diagnosis."

Two clinical forms of appendicitis :—

(i) Acute.

(ii) Chronic. $\left\{ \begin{array}{l} a. \text{ Relapsing.} \\ b. \text{ Recurrent} \end{array} \right.$

The structure of appendix is like that of cæcum but it has a narrow lumen and a thick wall, hence in inflammation the abscess is more likely to burst inside the intestine rather than to burst outside, beside adhesions are frequently formed round the appendix due to a localised peritonitis; thus from the anatomical structure of appendix the writer thinks the favourable position of the abscess is to burst inside though there is chance of the abscess getting septic from intestinal contents.

The writer does not agree with the bold statement of Prof. Osler and G. Dieulafoy (*Acad. de Med. May 11, 1897.*) "There is no medical treatment of appendicitis." In India the writer has found from experience appendicitis is quite amenable to treatment, but surgical cases are to be handled with a knife.

Treatment may be considered under three heads :—

1. The treatment during an attack.
2. The treatment between the attacks.
3. Operative interference.

1. The treatment during an attack:—

Absolute rest in bed is indispensable.

There are four primary points to be gained at the beginning of treatment :—

First the immediate relief from pain and vomiting if present.

Secondly, the arresting of peristalsis of the entire intestinal tract.

Thirdly, muscular relaxation of the entire alimentary canal.

Fourthly, painless evacuation of the entire contents of larger and smaller bowel.

There must follow the administration of cleansing and antiseptic agents, in conjunction with substantial rectal feeding when needed.

Prior to rectal feeding the colon should be flushed with soap suds or a normal salt solution, then panopepton, coffee, milk and whisky or brandy may be used in any combination or proportion desired.

The pivot upon which the following plan of treatment turns those amenable cases of acute appendicitis round to resolution within three to fourteen days will be shown to rest upon the fact that thorough evacuation of faecal matter can be secured, aseptic cleanliness of the alimentary canal established, and beneficial results obtained from internal antiseptics (*to all intents and purposes*) independent of intestinal peristalsis.

Hypodermically: -Injection of a hypodermic tabloid of morphine sulph and atropin sulph, the strength of which the physician will select according to the nature of the case; the atropine sulph prevents constipation and nausea, and increases the sedative action of the morphine,

Internally : —

A At the onset a mild saline purgative should be given at once, it may cut short the attack, the following are recommended.

I. Hourly administration of magnesium sulph., drachm dose till the bowel is opened,

or

R.

Sodii Sulph	ʒ. i
Mag Sulph	ʒ. i

M.ft. for a dose Sig. E. 3. h. till the bowel is opened.

Saline purgative is contraindicated if there be acute pain and vomiting.

N B.—The use of saline purgative early in the disease as advocated by some surgeons, is a most injurious practice.

As to the use of purgatives, authorities differ. It may be said, in a general way, that purgatives are dangerous even in the earliest stage. If anything is to be given to move the bowels, it should be of the mildest kind, such as Calomel in moderate doses and small doses of some of the weaker salines.

(*Twentieth Century Practice of Medicine Vol. VIII. Page 464.*)

B. Intestinal antiseptic as follows :—

(i) R

Benzo naphthol	gr. iii
Salol	gr. iii
Sodii Bicarb	gr. v

M.ft. for a pulv. morning and evening,

(ii) Dr. T. G. Green (*Monthly Cyclopædia and Medical Bulletin Mach, 1909*) recommends :—

R

Guaiacol carb	gr. iii
---------------	---------

M.ft. for a Pluv : Sig, one every four hours.

C. The following combination is worthy of a trial.

R

Tinc. Aconite	m. i
Lig. Morphine Hydroch	m. ii
Tinc. Belladonna	m. ii
Aq. aurentii floris	ʒ. i

M ft. for a dose: Sig. Every 2 hours upto 6 or 7 doses a day.

The main indication is to restore a condition of rest within the abdomen ; morphia and belladonna check peristalsis while aconite allays inflammation.

N.B. . The use of opium in the treatment of appendicitis has been generally discredited, because of its tendency to mask the symptoms. Certain surgeons advocate minimum doses In no circumstances, however, should this drug be used in large amounts

(*A system of medicine by Osler and Mc. Crae Vol. V. Page 431.*)

The only means to put the intestine at rest is opium. In Germany the opium treatment was introduced by Volz, and it has since occupied an important position. I strongly recommend opium. The chief objection viz, that the drug masks the symptoms—is unimportant in comparison with its actual value, particularly if the case is carefully watched.

(*Nothnagel's Encyclopedia of practical medicine, Disease of the Intestines and Peritonium, Page 908.*)

If vomiting be an acute symptom.

1. Stop giving food by the mouth ; rectal feeding is recommended, an ounce of panopepton in a pint of warm water acts well.

Peptonised milk is also recommended.

2. Use fractional doses of Hydrarg, Subchloride as follows :—

R

Hydrarg Subchloride	gr. 1/6
Sodii bicarb	gr. iv

M.ft. for a pulv : Sig. one every 3 hours upto 3 or 4 doses.

It checks vomiting, opens bowel and is antiseptic, but increases peristalsis to a certain extent.

Per rectum :—

1. Enema of the following :—

R

Glycerine	℥. ii
Soap water	℥. ii

Mft. for rectal wash once a day till the colon is free of scybulæ and fæcal matter.

When washing becomes clear, have a douche of condy's fluid, one drachm to a pint of tepid water with a rubber tube to keep the part as far as possible aseptic.

Locally :—

1 Half a dozen leeches over the seat of inflammation sometimes act like a charm : The writer strongly recommends these blood sucking apparatuses over the seat of inflammation as soon as possible after the diagnosis is made ; it nips the disease in the bud.

Lockwood on the other hand (*Appendicitis, its pathology and surgical treatment page 226*) remarks :—

“It is better not to apply leeches or blisters to the abdominal wall, as the subsequent condition of the skin increases the chances of suppuration, should an operation be performed.”

2. Hot linseed poultices over right iliac fossa on and around Mac. Burney's point.

3. Lees (*British Medical Journal 1903 Vol ii Page 1454*) strongly advocates the persistent use of ice-bag in acute appendicitis on the ground that it “rapidly relieves pain and obviously diminishes the local inflammation.”

4. Capezzuoli recommends collargol *internally* in table spoonful doses of a half to one per cent. solution every hour, while *externally* 30 grs. of Ung. Crede to be rubbed over the

seat of inflammation twice a day ; he also advises two enema of $7\frac{1}{2}$ grs. each in 3 ozs. of water to be given daily.

Dietetic treatment :—

Food must be liquid : panopepton, palatable peptone are permissible, because they are predigested. Milk should be classed as solid food here, as it is liable to form curd, but milk with sodii citras or lime-water forms curd with finely divided curduscles and hence allowed. The following combinations of milk are recommended *e.g.* plasmon and milk, milk somatose, hot milk and lime water, sanatogen and milk, fruit juices, whey, lactic acid, fermentlactyl of pasteur vaccine Co. Ltd., and lactone tablets of P. D. & Co.,

Normally the intestine abounds with a nonpathogenic microscopic flora ; pathogenic germs produce intestinal auto-intoxication ; to prevent this, lactic ferments are chiefly introduced in the system.

- N.B.* 1. Don't give any food which leaves residue
2. Don't give animal food.
3. Don't allow ice drink.

2. The treatment between the attack :—

A. Keep an eye over digestion :

1. Rectify defective teeth if any.
2. Avoid swallowing ill-masticated bolus of food.
3. Take meal at regular hours.
4. Eat slowly.
5. Have rest after each meal.
6. Eat food simple and nutritious.
7. Avoid seeds and fruits containing minute seeds.

B. Keep an eye over the bowels.

1 Remove constipation and use intestinal antiseptic as in the following :—

R

Thymol	gr. i
Pulv Glycyrrhiza Co.	3. i

M.ft. for a pulv to be dissolved in warm milk at bed time.

2. Massage of the abdomen is effective ; because :—

(a) It promotes absorption of inflammatory exudations.

(b) It encourages a normal action of the bowel

3 Apply a blister of emplastrum cantharidis 2" x 2" over Mac. Burney's point if there be dull pain and a lump can be palpated.

Snip off the bleb and apply ung. Sabin to keep up the action of blister as long as you desire.

C. Avoid violent exercise *e. g.* riding &c.

D. Avoid exposure to fatigue, damp and cold.

(ii) **Chronic.** It is sub-divided into 2 forms :—

1 Relapsing appendicitis.

2. Recurrent appendicitis.

In relapsing type the pathological process never settles down, inflammation leads to ulceration hence operation is indispensable.

In recurrent variety the pathological process settles down itself, hence there is no necessity of a surgeon.

3. **Operative interference :—**

(a) When there is evidence of Suppuration.

(b) When appendicitis is of a relapsing nature as mentioned above.

(c) When there are signs and symptoms of perforation.

N. B.—The reader is requested to go through the *New York state Journal of Medicine* of March 1910, for reference.

A CRITICISM.

Is there any Treatment in Appendicitis ?

BY DR. C. L. D. AVOINE M. D.

The decision of a Medical attendant in a case of appendicitis is so momentous that I am prompted to reply to the

article of Dr. Jogendra Lal Chandra appeared in the *Medico-surgical Journal of the Tropics of July 1909* "On the treatment of appendicitis." The writer of that article, in effect, makes the bold statement that he does not agree with Prof. Osler of Oxford who states that. *There is no medical treatment of appendicitis.*" As the leading surgeons and physicians of France not only support Prof. Osler's opinion, but also raise a voice of warning against the danger of medical treatment in this disease, and as the article of Dr. Jogendra Lal Chandra must have been read by many medical men who may be induced to give a medical treatment a trial in this grave malady, it is of the utmost importance to consider carefully the views on which the French doctors base their contention in making the important announcement.

To begin with, they tell us that the aetiology of this disease was, until very recently, obscured by erroneous theories. As is well known it was believed to be caused by foreign bodies, which get impacted in the canal of the vermiform appendix, by the spread of inflammatory processes from surrounding organs and tissues, for instance typhlitis or perityphlitis, by constipation, by diarrhoea, violent effort or strain a cold, improper food and what not! The cause of the disease is to-day recognized to be due to a closure of the canal of the appendix by catarrhal inflammation, by the twisting of the organ or very frequently to the formation of a calculus (enterolith) in the lumen of the appendix itself. That as soon as the closure is effected the imprisoned coli bacilli acquire an exalted virulence and set up the grave constitutional disturbances observed in this disease; and by their migration set up inflammatory processes resulting often, in general or localized peritonitis, inflammation of distant organs, suppuration, gangrene of the appendix and even perforation. That the gravity of the disease depends not on the intensity of the inflammation, but to a *severe toxic infection of the organism by toxins elaborated by the coli bacilli and*

other microbes in the closed cavity. (See Roger and Josuc-Bulletins et Memoires dela societe Medicale des hopitaux 1896 No. 4 page 97. See Delbet Archives gener de medicino De Rouville La Presse Medicale 27 Mai 1896. Dieulofoy. Manuel Pathologic Interne Town II page 412).

Bacteriological researches conducted at the Hotel Dieu at Paris and elsewhere prove conclusively that a culture of the ordinary coli bacilli impacted in the peritoneum of guinea pigs or rabbits is attended with no symptoms, while a bouillon prepared with a culture of coli bacilli obtained in the closed cavity of a case of appendicitis caused the death of the animal in a day or two. Experiments of Hartmann Minot Dicalafoy and caussade at the Hotel Dieu and De Ronville elsewhere.

The views that appendicitis is not merely an inflammatory disease, but is a serious toxic infection of the organism are supported by a host of French celebrities among others are Renon. (See le Bulletin medical 1898 p. 541.) Gerard Marchant, Dicalafoy. Pinarh Possi Roques, Segond Hartmann, Legry, etc.

The opinion that there is no medical treatment of this disease is supported by such savants as Ferrand, Chauvet ; Reclus Lucas Championmere, Leguen, Choput, Marchant, Segond, Routier, Poirier Villard, Dicalafoy. (Academi de Medecine de Paris seance du 15 Juillet 1902 and Journal de Medecine at de Chirurgie pratiques 10 Aout 1902, Manual de Pathologie Interne by Deculafoy Torn ii page 486,)

Ferrand warns us that opium "est un agent souvent plus dangereux qu'utile" and that belladonna "loin de suspendre les secretions de l'intestin et d'en paralyser la motricite favorise au contraire ces deux ordersde fonctions" (Academic de Medecine February 1899). Dicalafoy warns us that medical treatment is illusoire et nefaste ; il a l'air de faire quelque chose alors qu'il ne fait rien ; il masque l'es symptoms et il

endort la douleur, il conduit paisiblement le malade a la mort."

Prof. Dicalafoy says that he is at a loss to understand the indifference of certain medical men when in presence of a case of appendicitis with all its possible accidents. In two days a diffuse peritonitis may declare itself, gangrene and a fatal toxic infection can carry off the patient in no time or if a "cure" takes place it is only to leave the patient with a chronic or recurrent appendicitis. He is surprised that one dares waste time in discussing the effects of poultices, opium and belladonna in such cases when it is clear that the sooner the diseased appendix is removed the better it is for the safety of the patient.

A reply to Dr. C. L. D. AVOINE, M. D.

BY JOGENDRA LAL CHUNDRA, L.M.S

The writer has the pleasure of reviewing the remarks of Dr. D' AVOINE regarding Medical treatment of appendicitis, as criticism paves the path to perfection. The school of American and French surgeons advocates early operative interference in every case, they are so to speak mad after operation. One Surgeon compares the delay in operation in perityphlitis to a like delay in dealing with strangulated hernia. Another American Surgeon considers "all cases of appendicitis as being eminently dangerous to life from the beginning of the attack." English Surgeons on the contrary are too conservative.

When there is a diversity of opinion between two schools of surgeons, when science specially medical is progressing and therefore can not be perfect whatever may be the aetiology of typhlitis, when physicians are crowned with success in abating mild cases of appendicitis by medical treatment and when laparatomy comes under the category of grave

operation inspite of the revolution in modern aseptic surgery, the writer presumes it is rational to follow the median course between two methods :--American and French and English. The writer quotes the opinions of some of the leading surgeons and physicians of the day ;—

1. Sir Frederick Treves remarks :—

“The number of cases which undergo spontaneous cure form an overwhelming majority and cannot be lost sight of. A free incision should be made as soon as there is evidence of suppuration or perforative peritonitis,”—*Allbutt's System of Medicine vol. iii p. 933.*

2. Mc. Burney remarks :—

“The Dictum that every case of appendicitis should be operated upon as soon as the diagnosis made, is not to be accepted.”—*Internal : Text book of surgery vol. ii. Ch. 13.*

3. A. S. Mayo Robson writes :—

“Undoubtedly many of the milder forms of typhlitis, resolve under medical treatment.”—*med. Annual p. 488, 1891.*

4. Richardson considers Opium the best drug.

5. Burney Yeo and Haigh point out that some cases of perityphlitis are rheumatic in origin and yield to salicylates and general anti-rheumatic treatment.

6. Thornely Stoker remarks :—

“Operation is most unfavourable: it should seldom be resorted to. Purgation is the best remedy at our disposal. The safest way to effect it is by hydrostatic washing with warm water and a soft tube.”

7. Talamon says statistics show that the axiom that every case of appendicitis should be operated on cannot be accepted, and that the indications and chances for interference must depend on the clinical aspect of each individual case.”—*B. M. J. May 1, and 8, 1897. (epit).*

8. Priestly Leech adds:—

"The hotly debated question of Surgical versus Medical Treatment has not yet been settled though signs are not wanting that the strife has become somewhat less heated."

9. Saundby recommends "Calomel, hot Seidlitz powder and enema combined with rest and hot fomentations, and in chronic cases blistering over the tumor,"—*Med Annual* p. 79 1893.

10. In *the Medical Record* Dr Robinson quotes Dr. Eustace Smith as saying "I have seen not one, or two, but many cases of appendicitis in which the question of operation was being considered, which underwent such rapid improvement under anti-rheumatic treatment that all idea of surgical interference was quickly set aside."

11. Broca (*La. Appendicite, Pards, 1900*) observes:—

"Since I have learnt to weigh the indications for operation, instead of operating always and immediately, I have seen the mortality diminish."

CHRONIC CONSTIPATION.

Constipation means retention of fæces beyond the usual period, so that feculent matter is passed with difficulty and in a comparatively solid state.

Chronic constipation means a prolonged departure from the standard, natural to the individual, the direct cause of which may be want of sensibility of the nerves of the mucous membrane of rectum, so that contact of fæces does not cause sufficient stimulus to produce muscular action, or want of tone in the muscles, or absence of mucous secretion from the bowels which lubricates the tracts.

Finally, absorption of food takes place, leaving the scybalæ too hard for the muscles to act on. The condition may exist by itself, may be symptomatic of another condition, may accompany another pathological state or may cause other troubles.

Constipation in the truest sense of the term is not a disease; it is like fever, merely a symptom of some latent disease. It is the duty of the physician to find out the etiological factors in each individual case and to lay the axe at the very root of the disease; hence the rational treatment would be not to use purgative in the shape of bed-pills and the like, in a routine fashion, but to remove the causes of constipation.

Classification of Chronic Constipation —

I. Obstructive or mechanical causes —

1. Congenital deformities which occur often in the rectum and anus.
2. Extra-intestinal pressure from cysts, tumors, inflammatory disease etc.
3. Stricture.
4. Malignant and non malignant neoplasms.
5. Foreign bodies either swallowed or formed within the gut.
6. Fæcal impaction.
7. Diaphragmatic weakness *e. g.* repeated pregnancy.
8. "All uterine and ovarian derangements by mechanical or reflex means bring about constipation."

(*Pepper's System of Practical Medicine Vol. II. Page 640.*)

II. Non-obstructive Causes —

A. Chronic constipation primarily caused by disease of other organs than the stomach or intestines:

1. Due to venous congestion of intestinal circulation.
 - (a) In organic disease of the heart and kidney.
 - (b) In chronic pulmonary affections, asthma, emphysema etc.

2. Due to impairment of secretions poured into the intestines:

- (a) In chronic disease of the liver, where the bile is affected.
- (b) In disease of pancreas.

3. Due to impaired innervation of the intestinal wall through disease of brain, cord and nerves:

- (a) Brain tumors, hydrocephalus,
- (b) Chronic insanity.
- (c) Tabes and general paralysis.
- (d) Lead poisoning.
- (e) Neurasthenia, hysteria, and hypochondria.

- B. Chronic constipation caused by gastric-disease.

1. Due to impaired motility of stomach:

- (a) Atony of stomach.
- (b) Dilatation of stomach.
- (c) Pyloric stenosis (*cancer and ulcer*).

2. Due to secretory disturbance.

- (a) Hyperchlorhydria.
- (b) Chronic gastritis.
- (c) Achylia gastrica.

- C. Chronic constipation caused by, causing, or accompanied by other intestinal conditions:

1. Due to painful conditions, causing voluntary abstention from stool:

- (a) Hæmorrhoids.
- (b) Fissure of anus.
- (c) Ulcers of rectum.
- (d) Chronic proctitis.

2. Due to changes in the mucous membrane impairing its irritability.

- (a) Chronic catarrh of small intestine.
- (b) Mucous or membranous colitis.
- (c) Sigmoiditis.

(d) Atrophy after catarrh.

(e) Appendicitis.

D. Chronic constipation unaccompanied by any organic lesion :

1. Due to pathological functioning :

(a) Spastic constipation.

(b) Spastic contracture of the sphincter without anatomic cause.

2. Due to imperfect physiological functioning (*simple chronic constipation*.)

E. Errors in diet. *e. g.* to take of an insufficient quantity of vegetables and fruits, so that there is not sufficient bulk of fæces to provoke the usual muscular action.

F. Errors in drink *e. g.* due to excessive indulgence in strong tea. The large amount of tannin in the tea may cause considerable constipation.

G. Abuse of drugs. *e. g.* Patients who take iron or bismuth or opium are constipated. The same is true of most opium-eaters.

H. Blood dyscrasy: *e. g.* chlorosis, diabetes, chronic uræmia.

I. Insufficient exercise.

The Indications are :—

I. Mechanical constipation demands surgical interference.

II. A. Chronic Constipation caused by diseases of other organs than stomach and intestines.—Chronic diseases of the heart, kidneys, liver, and lungs are often accompanied by varying degrees of constipation, induced by hyperæmia of the intestinal mucous membrane and obstruction to the portal circulation. Corrections of these conditions by appropriate means will often by itself stop the constipated state if not of too long duration.

B. Chronic constipation caused by gastric disease.—try to rectify the disease if possible.

C. Chronic Constipation caused by, causing or accompanying other intestinal conditions—Two drugs stand out prominently for their alterative and tonic effect on the intestinal mucosa, hydrastis and ichthyol. The former is given in the form of the fluid extract and the latter prescribed in 50-per cent. solution in peppermint water, in ascending doses, beginning with about 8 drops in a wine-glassful of water and increasing to 30 drops, t. i. d., provided that the stomach does not rebel. Suitable tonics may be prescribed when indicated by the general condition. (*Medical Record March 12, 1910.*) Plenty of good air, outdoor exercise or, if these are not possible, certain specially planned gymnastic exercises to take their place, a cold sponge bath in the morning followed by a brisk rub, proper clothing, no excess of work, physical or mental, nor undue exposure to the weather are recommended.

D. to F. Try to remove the underlying cause

Professor H. Sermont, M. D. says :—"It is necessary to remember, for it is in accordance with clinical observation, that essential constipation is rather a disease of the well-to-do than of the workman, of the office stool and of the sedantary than of out-of-door occupations, of the citizen than of the peasant, of the meat-eater than of the vegetarian, and among its victims these attacks are more in the winter than in the summer, it is very frequent amongst the obese and amongst the gouty ; it appears to have a special predilection for certain families, once it is installed it is difficult to eradicate.

In old age, death begins, so to speak, in the intestines. In presenting the rational and sanative method of treatment, we would emphasise the fact that we must go direct to the source—the fountain head of the disease.

It is an absolute fact that 90 per cent. of all diseases may be directly traced to some derangement of the stomach or intestines. The colon is the main drain of the human body—a physiological sewer in fact ; and if it be necessary, for

sanitary reasons, to keep the main drain of your dwelling clean, how much more important it must be to keep the drainage system of the body free from filthy obstructions! We see the external dirt and hasten to remove it, but our eyes do not reveal to us the offensive internal accumulations—lakes of liquid fæces. If we could see them, we would not lay our heads upon our pillows until we had cleansed the human temple from its defilement. But there is a more serious aspect of the question. Scientific investigation has proved that there is a constant interchange of fluids going on in the colon—that the liquid portion of the foul waste is in unceasing contact with the blood current, and that a process of self-poisoning, **autointoxication** is for-ever going on by the re-absorption of this pestilential substance into the very fountain of life.

Dr. Arthur F. Hertz remarks that the undigested residue of a meal passes through the small intestine in approximately four and a half hours, and through the colon in twelve hours.

For practical treatment, constipation is divided into two stages:—

1. Atonic stage.
2. Spastic stage.

1. Atonic stage of Constipation :—

The sole indication is to produce spontaneous movement of the bowels. The physician should remember the following fundamental principles.

(a) Hygienic Treatment :—

1. Avoid sedentary habits and occupations
2. Practise gentle exercise *e. g.* walking, swimming etc.
3. Hilton recommends the following method of exercises :—

“With the hands clasped behind the head, the patient should raise and lower the trunk 6 to 10 times, and then bend the trunk forwards and backwards, besides rotating the trunk and flexing and extending the legs.”

(b) Mechanical treatment :—

1. Order abdominal belt for patient with enteroptosis, "hang belly,"

2. Active exercise relieves constipation ; and that it ought to be sufficiently brisk to induce active play of the diaphragm and abdominal muscles. (*Lauder Brunton in Allbutt and Rolleston's system of Medicine Vol. III, page 647.*)

3. Massage abdomen with pure mustard oil before bath.

(i) Hazzard in *the Proctologist Sep 1909*, advocates the use of abdominal massage—There are five generally accepted movements *viz* friction ; rolling, compression, kneading and percussion.

(ii) Cold abdominal massage as recommended by Barnes in the *Journal of American med. association Dec, 25, 1909*. While in a stooping posture the patient places the palmar surface of the fingers of his right hand over the upper part of the descending colon, and making slight pressure, massages with a spiral descending movement that tube and part of the sigmoid flexure. The finger should preferably be cold. If they are warm they may be cooled in cold water or, in their stead, a suitable cold object, such as a small, smooth glass paper-weight, may be used. The cold massage applied at this time initiates a peristalsis which propels the fæcal contents downward forcibly into the ampulla recti and thus sets up the normal reflex of defecation.

4. Use enema of pure lukewarm water when required.

(c) Hydro-therapy :—

Cold frictions, fresh water baths are very useful ; electric bath (*light or water*) is good in the constipation of *Tubes Dorsalis*,

(d) Dietetic-treatment:—

Plenty of vegetables and food rich in cellulose which leave residue; oatmeal and maize have the reputation of opening the bowels. They mechanically stimulate the mucosa; avoid extracts; cold drink, fruit juices, milk, fermented milk, curd, butter, fish and meat are recommended. Figs and prunes are laxative. Constipating foods such as red wines, cocoa, soups, are contraindicated.

Mendal advocates the use of agar agar: It is for the most part excreted unchanged in the faeces on account of its powers readily to absorb and retain water, it resists the action of intestinal bacteria and enzymes, it prevents the formation of scybalous masses and imparts a soft consistency to the rectal contents.

Writer's method of preparing agar agar.

Into a cup put agar agar, add water sufficient to soak it, keep this for 6 hours to soak, then pour equal volume of milk and add a pinch of sugar; boil it for five minutes, allow the fluid to settle on a basin with raised margin, and finally at the time of use pour a little rose water and dust pulv cardamon for flavour.

Dr. Hale White in *Guy Hospital Gazette Jan. 8, 1910* recommends whole-meal bread. It contains bran which stimulates peristalsis. Many people overcome slight constipation by drinking a glass of cold water when they rise in the morning. This reflexly stimulates the bowels to act. Constipated people should take a large amount of fruit, especially baked apple and prunes, almost any vegetables, and also porridge. Tamarinds are most useful in cases of constipation, and may be spread on toast like marmalade.

In conclusion, the diet of atonic constipation should stimulate peristalsis mechanically.

In *Therapeutic Gazette, September, 1909* Dr. Carey recommends the following foods as stimulate peristalsis.

1. Substances containing sugar such as honey, cane-sugar, sweet fruit etc.
2. Foods containing organic acids as whey, acid fruits etc.
3. Salty substances *e. g.* salt fish, cheese etc.
4. Substances containing carbonic acid *e. g.* ærated water, yeast, bread etc.
5. Substances containing fat *e. g.* butter, ghee, oil etc.
6. To these stimulants Boas adds the thermic and mechanical ones.

On account of the thermic effect, only cold is considered, hence a glass of cold water before breakfast is scientific.

(c) Medicinal treatment:—

In habitual constipation each case must be treated on its own merits and individual idiosyncrasies carefully studied. Though the symptom is a simple one, its treatment needs not this drug nor that drug, but any drug or many drugs or no drugs, combined with systematic measures for gradually restoring the healthy functions of the digestive tract that culminates in normal defæcation.

Mild laxatives are recommended.

1. Cascara Evacuant (*P. D. & Co.*) Dose 15 to 20 min. with water at bed time.
2. Pulv. Glycerrhiza Co,
Dose, a teaspoonful with warm milk at night.
3. Tamar Indien grillon.
Dose, one before retiring.
4. Manna, half a drachm for children.
5. Pulv of one myrabolum at bed time.
6. Confectio Rosæ and Confectio sulphur, equal part :
Dose, two drachms with warm milk at night.
7. Purgen one at bed time according to age (*Vide C.*
(41)

Wilkinson's opinion.)

8. Vegetable laxative tabloid or tablet, one at bed time.
9. Exodin, one after the last meal.
10. Laxoin pallatinoid gr. ii, one before going to bed.
11. Prunoid (*Sultan Drug Co.*) Dose 1 to 3; It is composed of Phenolphthalein, cascara sagrada, ipecac and prunes.
12. Phenolphthalein Co. Tablet. (*P. D. & Co.*)

R

Phenolphthalein	gr. 1
Strychnine Sulphate	gr. 1/500
Ext. Belladonna, leaves	gr. 1/100

13. Writer's formula :—

R

Cascara Evacuant	m. x.
Senna Cordial	3. i
Glycerine	m. xv
Tinc. Nux Vomica	m. iii.
Tinc. carminative	m. x
Dec. aloe Co.	ad 3. iv

Mft. for a dose. Sig. to be taken occasionally.

Dr. Camac Wilkinson in *Practitioner May 1910 page 638*, enlightens us with the following points :—

Almost all purgatives in large doses are in part absorbed, and passing into the circulation may seriously injure internal organs, especially the kidneys.

1. Pancreatic Juice acts upon castor oil.
2. Calomel irritates the kidneys when injected subcutaneously, while its purgative effect is mainly lost.
3. Purgen in 1 or 2 doses may be effective and harmless, but if repeated, often, may irritate the kidney and also induce catarrh of the bowel.

11. Spastic stage of Constipation :—

Physician should keep in mind that the intestine is in an irritable condition, that the mucous membrane is inflamed and that the intestinal musculature is in a state of hypertonicity. The medical man should remember the following rules :—

(a) Hygienic treatment :—

1. Rest, especially after eating, is indispensable.
2. Avoid mental worry and anxiety.

(b) Mechanical treatment :—

1. Massage is contra-indicated, because its use would aggravate the spasmodic contraction of the colon.
2. The abdomen should be kept warm by silk bandage.
3. Oil treatment is of great value. The writer injects the following oil into the rectum with a long rubber tube attached to the enema pump or douche.

R.

Fresh goat's bile one	
Tinct. Assafoetida	℥. i
Oil Papaveris	ad ℥. vi

The patient should lie on the abdomen for about a quarter of an hour. The oil and bile dissolve hard scybalæ which have remained in the folds of the colon, often for several days and have maintained the spasm of the musculature, while assafoetida exerts its carminative action. Repeat the process just before the patient retires till all scybalæ are off. The oil should be retained all night.

(c) Hydro-therapy :—

Cold procedures are contraindicated ; warm frictions, warm baths are good followed by silk or woolen bandage.

(d) Dietetic treatment :—

Mild constipating diet is recommended, as coarse foods, rich in cellulose, would aggravate the spasm of the colon and might cause membranous enteritis or give rise to diarrhœa.

A list of mild constipating diet is given below :—

Tea and fruit juices should never be taken cold, milk, fermented milk, citrated† milk, cream, cheese, peas, potatoes, honey and marmalades made from raspberry, orange, apples are good.

Coarse breads, acids, sour fruits, flatuous vegetables such as cabbage peas and beans, duck, oiled chatneys etc. are forbidden.

In conclusion, the diet of spastic constipation should stimulate peristalsis chemically.

(e) Medicinal treatment —

Saline aperient *e. g.* Carlsbad, Apenta or Kutnow's powder flavoured with ten drops of Tinct. Carminative, early in the morning on an empty stomach, is recommended. Purgatives are contraindicated, because they increase catarrh of the intestine and thereby add fuel to the fire of the disease.

Sedatives are good. The writer recommends the following:—

R

Tinc. Belladonna	m. v
—— Carminative	m. x
Nepenthe	m. v
Spt. Chloroformi	m. x
Aq. Menth pep.	ad. ʒ. i

Mft. for a dose, Sig: one, thrice a day.

Patients suffering from colic and for those who travel, tabloid Atropin sulph gr. 1/100 twice a day after eating, is recommended.

*Lactic acid bacilli are prescribed with the object of arresting putrefactive processes in the intestines by means of the lactic acid produced and thus preventing auto-intoxication from the absorption of bacterial poisons (*Practitioner*, P. 635 May, 1910.)

†Citrated milk.

R

Sodii Citras.	gr. xx
Milk	o.j.

N. B.—Children should be strictly trained when young to endeavour to empty the bowels at the same time regularly every day. Another cause is the failure to go to the water closet when there is a call to do so.

It is also important *not to strain* in acute pericarditis, as when a person strains he raises his blood pressure, and so may dilate the inflamed heart. The same thing applies, of course, to an aneurysm. In all these cases it is important to have the bowels kept open gently every day. This matter will require special care in pericarditis, as, in that condition, it is rightly customary to give opium, which has a constipating effect. A considerable proportion of the cases of cerebral hæmorrhage occurs while the person is straining to make his bowels act, and thus not rarely the cerebral hæmorrhage takes place in the water closet. A little calomel at night, followed by any saline mineral water in the morning, should be given to those who are subject to high blood-pressure, or are, for any other cause, liable to cerebral hæmorrhage, so that they may pass an easy motion.

Two very important factors in all cases of constipation are:—

I. Regularity.

II. Perseverance.

To visit the water-closet daily at the same hour, to remain there without however straining forcibly, although a slight compression of the abdominal muscles is often necessary, and to persevere until success is attained, seemingly appears a small matter, but it is a very important one.

A rich diet containing little water, or a pure meat diet, or finally one which is very slightly stimulating to the intestines, consisting of easily absorbable articles which leave but little residue, may lead to constipation.

In conclusion there is a royal road to health and every one who chooses may walk in it. It is obedience to natural

9. *Holloway's pills*.—Aloes, rhubarb, saffron, glauher's salt and pepper.
10. *Page wood Cock's Wind pills*.—Aloes, oil of Carui and soap.
11. *Scott's pills*.—Aloin and cascara with soap basis.
12. *Whelpton's pills*.—Rhubarb, aloes, ginger powered ipecac and soap.

DIARRHŒA.

In normal circumstances the food, after having been partly digested in the stomach, passes rapidly through the upper part of the small intestine. The movement of the intestinal contents is effected by the peristaltic contraction of the intestine, which is particularly active in this part of the tract.

The lower part of the small intestine is less active, and in the large intestine where the contents enter in a fluid state, the peristalsis is exceedingly slow, while the function of the colon being absorption of fluid, the fæces become thicker. If, however the peristaltic process in the large intestine becomes abnormally fast, the evacuations are more or less fluid.

If the movement of the small intestine is also increased the liquidity is even more marked.

Hence we conclude that the watery condition may depend upon:—

1. Increased peristaltic movement.
2. Diminished powers of absorption.
3. Increased secretion of fluid from the intestinal mucous membrane.

Diagnosis. It is very essential to examine (1) the blood of the patient and (2) the fæces to institute the right sort of treatment. If mono-nuclear leucocytes are increased, there may be cancer or protozoon infection, if eosinophils are increased, it

means irritation by hook-worms ; if polymorpho-nuclear leucocytes are increased, it means an amoebic infection or an inflammation.

In the treatment of diarrhœa the physician should bear in mind two cardinal points, *viz* :—

- i. *Remove the cause.*
- ii. *Soothe the irritation of the intestine.*

The writer can not help quoting the well known classification of Prof. T. Lauder Brunton with modifications :—

Diarrhœa caused by

- 1 Irritants.
2. Decomposed food.
3. Microbic infection with subsequent bacterial fermentation.
 - a. Septic diarrhœa.
 - b. Infantile diarrhœa.
 - c. Hill diarrhœa.
 - d. Summer diarrhœa.
4. Uræmia : (Uræmic diarrhœa.)
5. Gout.
6. Cold.
7. Nervous influences, *e. g.*, " Prandial " diarrhœa, morning diarrhœa ; diarrhœa caused by hysteria, fright.
8. Malaria.
9. Prolapse of rectum.
10. Malignant disease.
11. Biliousness.
12. Chronic invalidism.
13. Sprue.
14. Atony (chronic diarrhœa in tropics) Lardaceous changes of the gut such as in chronic syphilis and phthisis.

1. Diarrhœa caused by irritants —

℞		
	Nepanthe	m. v
	Castor oil	℥. iv
	Pulv : acacia	q. s
	Aq : Carui	ad. ℥. j.

Mft. for a dose ; castor oil clears out the irritant matters from the intestine, while opium soothes the bowel.

Diarrhœa due to irritation in the mucous membrane of the intestine —

℞		
	Chlorodyne	m. xx
	Chalk mixture	ad. ℥ ss

Mft. for a dose : sig : every four hours when required. Lime forms with fatty acids an insoluble soap and will thus neutralise such acids which are strong intestinal irritants, moreover calcium salts slow the movement of involuntary muscular fibre and tend to lessen peristalsis.

Diarrhœa due to mixed causes, *i. e.*, irritating substances in the intestine and an irritated condition of the mucous membrane itself.

1. Open bowel by castor oil with laudenum.
2. An hour afterwards let the patient take some warm drinks.
3. Subsequently.

℞		
	Bismuthi Carb :	gr. x
	Mag. Carb.	gr. iii
	Pulv : Tragacanth Co.	q. s.
	Spt. chloroformi	m. x
	Tinc. carminative	m. x
	Aq. cinnamomi	ad. ℥. j

Mft. for a dose : Sig : one to be taken 20 minutes before food.

4. ℞		
	Pulv. Cretæ aromatic	gr. xv
	Dover's powder	gr. ii

Mft. for a pulv. sig. : one after every loose motion.

2. Diarrhœa due to decomposed food ; e.g., albuminoid food, cheese. etc.

R̄

Oil Recini	℥. j
Tinc. Belladonna	m. x.
or	
Atropin	gr. 1/100
Pulv. acacia	q. s
Tinc. cardamon Co :	m. xx
Aq. aurantii floris	ad ℥. j

Mft. for a dose Sig. one every hour until diarrhœa is less or physiological action of Belladonna begins to appear *viz.*, dryness of mouth, dilatation of pupil etc.

3. Diarrhœa due to microbic infection.

Antiseptics are prescribed, e. g.,

Bismuthi salicylas, salol, benzo naphthol, calomel etc.

- (a) Septic diarrhœa.

Dr. J. Bose's formula,

R̄.

Tinc. Ferri perchloride	m. xv
Acid Nitromuriatic (Dil)	m. x
Liq. Bismuthi	℥. j
Tinc. Gentian Co.	m. xv
Inf. calumba.	ad ℥. i

Mft. for a dose sig : one thrice a day.

- (b) Infantile diarrhœa, epidemic diarrhoea.

(*Zymotic enteritis*)

causes a high rate of infantile mortality under one year of age.

It is fostered by higher temperature of the late summer and dust with but little rain, by flies in the dissemination of the disease, and by the contamination of milk caused by ordinary organisms of putrefaction.

Zymotic enteritis is in no sense of the word an infectious disease, and it cannot be conveyed by contagion.

The putrefactive organisms act upon the albuminoid constituent of milk as albuminoid-dissolvers, and create, by their action upon these constituents, virulent chemical poisons. It is the chemical poisons which develop under the conditions that have been described, which produce the toxæmia characteristic of zymotic enteritis and which are so virulent that they destroy the infant in the course of a few days by their poisonous action upon the cellular tissue throughout the body.

The boiling effectually destroys the lactic organisms, but it makes no impression on the spores of the putrefying bacteria. Much higher temperatures and much longer exposure are required to kill them. It is the condition of the milk *after* the boiling that constitutes the critical and imminent danger to the infant.

Hence the rational plan of treatment is that milk for the use of infants shall be *preserved fresh and unboiled*.

After milching collect it in a glass flask previously washed and plug the mouth with cotton :

Put it under ice ; when required take a portion of the milk, add equal volume of water and little barley, boil it for some time ; it is now ready for use.

Some physicians recommend fresh unboiled milk.

Albulactin in Infantile Diarrhœa (H. H. Riddle : *Midwives' Record*, Aug. 1910). The microbe of acute epidemic enteritis thrives and develops in nothing better than in milk. The problem therefore is to administer a milk-free food, which will be digested before it reaches the intestines, and will at the same time provide the requisite nourishment. The author has had remarkable success with albulactin, a soluble milk-albumin. Twenty grains of albulactin in three tablespoonfuls of water was given every two hours in place of the

usual feeds. The result was a practical disappearance of all the acute symptoms of the ailment within a week. The pinched expression, fretfulness, restlessness, the general air of discomfort, were gone, and the motions had lost their offensive character, while a gain in weight proved that the general system had derived an adequate amount of nourishment.

In infantile diarrhoea *intestinal lavage with normal saline sol. is good*

In Infantile diarrhoea with offensive sour stool, bacterial fermentation, salicylate of Iron is best.

R

Ferri sulph	gr. xx
Sodii salicylas	gr. xx
Glycerine	℥. iij
Aq.	ad. ℥. iij.

DOSE a teaspoonful every hour until stool is of a dark colour.

Guaiacol Carbonate in Infantile Diarrhoeas (Liachenko, *Semaine Medicale*, Aug. 3, 1910).—Guaiacol carbonate is indicated in chronic enteritis in infants, accompanied by intestinal fermentation, as well as in putrid diarrhoeas in children, in which this drug exercises an almost specific action. The drug is decomposed into carbonic acid and pure guaiacol, the latter acting as an intestinal antiseptic. The dose varies according to age; for an infant 0.5 gramme every three hours, while children 2 to 5 years of age can have 0.15 to 0.20 gramme three-hourly, the daily dose varying from 0.75 to 1.0 gramme. Guaiacol carbonate is contraindicated in all acute gastro-intestinal affections accompanied by vomiting, pains in the stomach and intestines, and frequent liquid stools, as owing to its rapid elimination the drug is not decomposed. In acute colitis and in dysentery it should not be given. Holscher, however, has employed it with benefit in enteric fever.

(c) Hill Diarrhoea :—

R

Dover's powder	gr ii
Grey's powder	gr. j
Bismuthi subgallate	gr. vii
Lactopeptin	gr x

Mft. for a pulv : Sig. one thrice a day.

(d) Summer diarrhoea — is caused by a variety of organisms ; no specific bacillus as to the cause of this disease is known.

Two clinical divisions are due to :—

1. Acute toxæmia (*dyspeptic diarrhœa*)

It may be induced by irritation of the intestine by improper food, or any food which has been decomposed or rendered noxious by means of the intestinal bacteria

2. A destructive lesion of the intestine.

(*ileo-colitis*)

It includes that large group of cases in which a definite infection has occurred, some organisms having invaded the intestinal wall, set up destructive action leading to enteritis, colitis or a combination of both,

The bacteriologists are unanimous that the following kinds of organism inhabit the bowel normally and abnormally.

1 Putrefactive organisms.

2. Organisms of the lactose fermenter group, commonly called colon group. *e. g.* bacillus coli which is an inhabitant of normal stools. &c

They are non-infective.

3. Organisms of the non-lactose fermenter group commonly called "Typhoid group" *e. g.* typhoid bacillus, paratyphoid bacillus, bacillii dysenteric. (*Flexner, shiga, and Morgan*).

They are infective.

N B — It is an established bacteriological fact that colon group can not in any way approach the typhoid group in essential characters at any rate *in vitro*, whatever they may do in nature.

Theory of summer diarrhœa : —

Putrefactive organisms, introduced along with food or already present in an active state in the intestine, induce fermentive changes ; toxins are formed, some of which are absorbed, some irritate the mucosa and induce their expulsion, originating a diarrhœa (*acute toxæmia*).

If more irritating food be given, or if the original irritation be not soon removed, the repetition of such “insults to the intestinal mucosa” as Flexner expressively calls them, renders the intestinal wall prone to bacterial invasion, and from a non-infective and, if properly treated comparatively unimportant condition, the disease now becomes a serious infection, *i.e.*, acute toxæmia becomes what is known as entero or ileo-colitis.

Wash the stomach with saline solution (1 dr. of table-salt to a pint of water), wash the rectum next with normal saline solution.

The following combination is recommended.

Sodii Bicarb	gr. x
— Sulphocarbolas	gr. ii
Ext. Ipecac liq.	m. i
Ext. Hydrastis liq.	m. v
Syr : Rhei Aromatic (P. D. & Co)	3 p
Aq. Cinnamomi	ad 3 j

Mft. for a dose : Sig. one thrice a day.

Soda carbonate is needed as an antacid, the sulphocarbonate as an antiseptic, ipecac to incite the secretion of normal digestive fluids; hydrastis is a tonic to the gastro-intestinal mucosa and checks their abnormal secretions; rhubarb empties the gut and has an after-astringency; while cinnamon water is astringent.

Hence rational dietetic treatments are :—

- I. “Water diet” or barley water diet or cocoanut water diet for first 24 hours.

The object is to wash out the stomach, to flush out the bowel, to supply the depleted tissues if retained and to provide no suitable 'pabulum' for organisms to thrive and multiply.

2. 'Albumen water' after first 24 hours; whites of 2 or 3 fresh hen's eggs are to be stirred in a pint of water; add a teaspoonful of brandy, a little salt and half an ounce of cinnamon water for flavour.
3. Albulactin gr xx dissolved in $1\frac{1}{2}$ ozs of warm water.
4. Subsequently Allenbury (No. 1) or Horlick's malted milk are to be prepared with water.

NB—They consist of dried milk with cereal, the starch being Completely Converted into Sugar.

The Mother should be strongly impressed with the fact that this is purely a temporary diet, a stepping-stone, as it were, to cow's milk.

5. Peptonised milk or milk with sodium citrate.

Prognosis:—

According to Miller,¹ it yields a "death-rate of nearer 90 than 80 per cent." According to Cautley,² "quite three-fourths of the cases prove fatal," and Professor Osler³ states that "The outlook in the majority of cases is bad, particularly in children artificially fed."

Treatment:—

Open bowels by Castor Oil followed by 'Tinc: Camphoræ Co.: and some intestinal antiseptic. Opium alleviates pain and soothes peristalsis.

"If a medical man has not learnt how to use opium safely in the diarrhœa of children, he can hardly be said to *know* his profession."

(*Burney yeo's Manual of Medical treatment Vol. 1 Page 245.*)

¹ Miller, R. "Medical Diseases of Children," p. 292 Bristol Wright & Sons.

² Cautley, E. "Diseases of Children," p. 289. London Shaw & Sons.

³ Osler, Sir W.: "Principles and Practice of Medicine." Fourth Edition. p. 510. London D Appleton & Co.

4. Diarrhoea caused by uræmia :—

There will be a history of chronic diarrhœa with a trace of albumen in urine, and the urine of low specific gravity.

Don't check the diarrhœa hastily, as it is the nature's method to drive away the poison through the alimentary canal.

5. Diarrhoea caused by gout.

Don't check the diarrhœa like uræmia as it is nature's effort to eliminate toxic products through the bowels.

6. Diarrhoea from cold.

A chill may produce an intestinal catarrh with consequent diarrhœa : wear flannel bandage. Small doses of saffron and opium are recommended.

7. Nervous Diarrhoea.—

Moral treatment should be encouraged.

(a) " Prandial diarrhoea called after Linossier of Vichy.

Introduction of food in the stomach gives immediate desire to stool.

The author explains its occurrence in the following way : Under ordinary circumstances the bile begins to pour into the duodenum as soon as food enters the stomach and continues throughout the process of digestion. In bilious subjects, under the influence of the gastro-intestinal reflex, the evacuation of bile takes place suddenly, and as these patients are almost always choleemics, the sudden discharge of a large quantity of bile into the intestine sets up violent peristalsis and determines an irresistible action of the bowels. The pain, however, may be due to violent contraction of the gall-bladder or possibly to the passage of a gall-stone.

By way of treatment the author recommends the administration of opium and belladonna in order to lessen the sensitiveness of the gastro-intestinal reflex, to be given a quarter of an hour before the meal, with, on the other hand, a lacto-vegetarian diet, Vichy water, moderate exercise and a quiet life, avoiding every source of fatigue.

Patients should be given two or three compressed Lactobacilline tablets *with meal*.

The writer recommends.

Bismuth or Liq. arsenic before meal to check the impulse

(b) **Morning diarrhœa**

Take no liquid after 5 o'clock in the afternoon. The patient should be encouraged to resist the inclination to defæcate

(c) **Diarrhœa depending upon locomotor ataxia :** antipyrin is recommended.

8. Malarial Diarrhœa —

Mercurial followed by saline purgative.

9. Diarrhœa depends on prolapse of sigmoid flexure into the rectum.

(i) Avoid all articles of food which would be likely to pass through the intestine undigested and to irritate the tender part of the bowel.

(ii) Open bowels by enema half a pint every morning. Immediately after inject the following and it is to be retained.

R

Tinc. catechu	ʒi—ii
Aq.	ʒ. ij

10. Diarrhœa due to malignant disease.

Insert the following suppository :

R

Ext. Belladonna	gr. ½
Morphin. sulph	gr. 1/3
Cocaine Hydroch.	gr. ½-1
Ol. : Theobrom	q. s.
Ft. Suppository as required	

11. Biliary diarrhœa.

Biliousness means a condition in which too much bile has been present.

The function of bile is to prevent putrefaction in the bowel to a certain extent, to assist in the digestion of fat and to increase peristalsis. If for any reason the function of the liver is interfered with, and the flow of bile is decreased, which in turn interferes with the bowel functions, an accumulation of effete material takes place in the latter organ.

This forms a hot bed for the propagation of morbid bacteria, which in turn form toxins. By reason of inactivity of the bowels these toxins are absorbed into the circulation and a train of symptoms ensue which we called biliousness.

The urine is loaded with indican or acid or both due to the absorption of toxins. Hence the rational treatment would be : —

- (i) to follow nature's course of elimination by fractional doses of calomel.
- (ii) to administer antiseptics in the shape of sulphocarbolates.
- (iii) a quantity of apples (peel and all) will put a stop to biliary diarrhœa. This use of fruit is almost unknown, but is worth bearing in mind.

In *Bilious diarrhœa*, the motions are stained deeply with bile ; it is due not to an excess of bile but to a disturbed balance between secretion and the utilisation of bile. The bile not being utilised, promotes peristalsis and so, it is hurried through. This diarrhœa is checked with fat administered along with food ; a little *ghee* with rice conji generally checks it.

12. Chronic diarrhœa with watery Stools.

The fluid is not water, but is an albuminous fluid liable to decomposition whether the fluid is an intestinal secretion or is a transudate or exudate, it is the cause of the increased peristalsis ; hence the need of intestinal disinfectant.

Dr. Schmidt in *Mediz. Klinik*, March 28, 1909, recommends hydrogen peroxide to be the most effective and least harmful.

Hydrogen peroxide should be given in combination with pure agar-agar.

13. Sprue or psilosis.

In the treatment of sprue the physician should bear in mind the pathological condition of the gastro-intestinal tract *Vis*:—

(i) Mucous membrane is eroded and therefore exceedingly sensitive.

(ii) Glandular structure and villi are deficient in secretion. Hence the rational plan would be

1. To establish a state of "physiological rest" in the bowels.
2. To administer bland diet that can be assimilated and absorbed by the inflamed gut.

Medicinal treatment.

Open bowels by a teaspoonful of castor oil early in the morning for thrice a week.

Prof. Patrick Manson rightly remarks:—

"It is a very great mistake to try to shut up the bowel altogether by sedatives or astringents."

Writer's method of treatment:

1. Hydrarg. perchloride gr. 1/100 Tabloid to be taken morning and evening.

2. Mixture Bismuth et. pepsin Co: (Hewlett's)

Dose a teaspoonful thrice a day after meal.

N.B.—Treatment by *sina rubra*:

Sina rubra	1 oz.
Aq.	12 oz.

Boil, reduce it to 7 drachms (*strain*).

To this add spirit 3. j.

Dose for an adult the whole quantity and for a child one-fourth quantity.

It should be given every night for four nights.

3. Gargle with any of the following :—

- (a) Listerine.
- (b) Glycothymolin.
- (c) Alkathymol.

4. Œsophagial pain :

- (a) Janowski recommends 5 to 10 drops of a sol. of 1 in 1,000 adrenalin.
- (b) The writer recommends morphia.

5. Intestinal pain :

Cantlie recommends hot packs.

6. During convalescence : fractional dose of liq : arsenic and some organic preparation of Iron like Iron somatose, etc are recommended

Alcoholic stimulant, as a rule, does harm

Dietetic treatment of Sprue

(i) *Milk treatment*.—"Milk only—nothing but milk."

Milk and lime water ; milk and sodium citras, fermented milk ; Benger's food and goat's milk , Plasmon arrowroot and goat's milk , Banana powder and milk

(ii) *Liver-soup treatment*.—i.e soup prepared from goat's or sheep's livers. In milder cases of sprue this treatment acts admirably well.

(iii) *Egg treatment*—If the patient can not bear milk give him white of an egg beaten with cinnamon water.

(iv) *Fruit treatment*.—Van der Burg advocates this method of treatment. Fruit juices, e.g., pomegranates, oranges are highly beneficial.

(v.) *Meat treatment*. Cantlie remarks that if the milk and fruit diets fail, it is advisable to try a meat diet. Raw meat juice is an excellent adjuvant.

How to prepare raw meat juice.

Pound sufficient good raw flesh in a mortar ; add 2 ounces of water and 20 minims of dilute hydrochloric acid.

Six ounces of Meat Juice is obtained on straining.

(vi) Rice conji.

Hygienic treatment of Sprue.

Bandage abdomen with a warm cloth; silk cloth is preferable. Patient should be in bed till the stools become solid; careful nursing is indispensable.

PERITONITIS.

Peritonitis means inflammation of the peritonium—the Serous sac of the abdomen.

It may be *acute or chronic, local or diffused*.

Varieties of Acute peritonitis according to their causation,—

1. Traumatic :
- 2 Perforative (*ulcer of stomach, intestine etc.*)
3. Irritative (*disease of neighbouring organs.*)
4. Secondary (*blood poisoning.*)

Varieties of Chronic peritonitis.—

- (i) non tubercular.
- (ii) tubercular.

reatment

Absolute rest in bed, rectal enema of hot water half to one pint to relieve thirst, saline aperient *e. g.* mag. sulph at the very beginning of the disease to drain fluid, and morphia hypodermically to alleviate pain, are strongly recommended.

Colloidal silver ("*collargolum*") is an excellent, non irritant and non-toxic antiseptic used both in surgery and internal medicine, is readily absorbed and has a bactericidal power superior to that of mercury.

Internally:—

Good results are obtained in acute infectious intestinal catarrhs, dose being a dessertspoonful of the 1 per cent. solution of collargolum given in milk every 1 or 2 hours.

Locally:—

Crede's ointment is used

It contains 15 per cent. albuminised solution.

Writer's formula :—

R.

Ichthyol	3. iv.
Ext. belladonna	3. iv.
Glycerine	3. iv.

Mft. sig: to apply over the abdomen followed by oiled silk and bandage.

Duckworth recommends inunction of hydrarg. ointment over the abdomen.

Hydrogen Peroxide Injections in Peritonitis and Pleurisy (E. Cionini and F. Marcantoni. *Semaine Medicale*, June 1, 1910).—The authors have practised intraperitoneal or intrapleural injections of hydrogen peroxide in 35 cases, 29 of these being tuberculous peritonitis and 6 pleurisy. In all cases a single injection was sufficient to effect a cure. The injections consisted of 1.5 litre of normal saline solution at 40° C. (104° F.), to which 75 c. c. of hydrogen peroxide is added at the time of injection, making a 5 per cent. solution. For children 400 c. c. is sufficient for an injection, and for the pleura one litre. The fluid is evacuated after six to eight minutes.

Peritonitis.—Pain is brought under control only with these drugs, *viz.* quinine sulphate, Ichthyol, and mercury, quinine acts on the nervous mechanism, Ichthyol acts on the capillary vessels and mercury acts on the specific part of the inflammation. These three drugs serve definite ends. Opium and morphine are given empirically. Mercury and Ichthyol are given internally as well as rubbed on the abdomen. No other drugs can relieve the pain of pelvic peritonitis so nicely and without any undesirable after effects. Ichthyol acts as an intestinal antiseptic and a mild laxative as well.

ACUTE INTUSSUSCEPTION.

Acute intestinal invagination is preeminently a disease of infancy and childhood.

The Classical Symptoms are :—Sudden onset with severe paroxysmal, colicky pain, vomiting and straining and muco-hæmorrhagic stools, constant desire to go to stool with the passage of mucus and blood, without fæces or flatus is pathognomonic of intussusception.

On palpation a cylindrical or rounded intestinal tumor can be felt.

The physician should bear in mind two factors *vis* :—

1. A damming up of the fæcal current (*obstruction*).
2. A shutting up of the blood supply to a portion of the intestine (*strangulation*.)

Certain rules regarding the management of intussusception :—

1. Use opium very cautiously for this drug so masks the symptoms and obscures the general picture, as to lead too often to fatal delay in the employment of radical treatment.

2. Lavage of the stomach and colon should be carried out, for it lessens the vomiting, the pain and the absorption of toxins, and also renders safer the administration of an anesthetic.

3. Postural methods and gentle manipulation may be tried to reduce the invagination

N B —Spontaneous reduction has been known to take place

The medical man should remember :

1. Don't give purgatives, as they increase the pain and vomiting and add to the risk of gangrene, perforation and peritonitis.

2. Don't insufflate the bowels with air, or gas or irrational hydrostatic pressure ; the rupture of bowel may result as the pressure can not be regulated,

3. Don't allow 8 hours or more to pass after the diagnosis is made.

Moderate paralytic conditions of the bowel may sometimes be corrected by hypodermic injections of sulphate of eserine (*gr. 1/100 to gr. 1/50*); by colonic douches of cool water or saline solution, or enemata containing stimulating remedies like asafoetida and turpentine. External applications, such as mustard plasters and turpentine stupes, may also be beneficial.

(*A system of Medicine by Osler and Mc. Cræ Vol. V. page 471.*)

Radical treatment :

Early laparotomy is the least dangerous and the most successful method of treatment, but in a warm climate death rate is high

HÆMORRHOIDS.

Hæmorrhoids are caused by the dilatation of blood vessels with corresponding protrusion of mucous membrane of the rectum.

These are brought about by sedentary habits, obstruction of the portal circulation or chronic constipation.

The physician should keep in mind the following points:—

1. To reduce the inflammation of the hæmorrhoids.
2. To bring about a contraction of the hæmorrhoids.
3. To prevent their recurrence.
4. To lubricate rectum with ointment.

1. To reduce the inflammation, apply cold compress or hot fomentation over anus when in the dorsal position with hips elevated.

(a) *Cold compress* :—

R

Tonic Opii	ʒ. i
Goulard's lotion (cold)	o i

(b) Hot fomentations:—

- (i) Let the patient sit over hot floor, or over hot handle of a chair.
- (ii) Foment with equal parts of the folia Cannabis Indica and salt.
- (iii) Foment with the soft pulp of snail.

2. To reduce the size of hæmorrhoids the writer prescribes Adrenalin or Hazeline ointment, soaked in absorbant cotton, when the sphincter contracts cotton affords mechanical pressure and aids contraction.

3. To prevent recurrence, the patient should take cold bath daily; wash anus with cold water after each defæcation, keep the bowels loose by mild laxative.

The writer recommends the following;—

- (a) Confectio Rosæ. Confectio Sulphur. aa. oz. i,
Dose a dessertspoonful with warm milk before retiring.
- (b) Pulv: of one Myrabolum at bed time.
- (c) Pulv: Glycerhizæ Co. dr. i.

To be taken with warm milk at night.

A Pearce Gould in *The Hospital*, says that in his experience nothing has afforded such comfort to patients suffering from piles as the daily use of a small enema. He generally prescribes not more than three-quarters of a pint of tepid water, to be gently injected into the bowel every morning.

4. To lubricate rectum, the patient should use with a rectal ointment introducer the following ointment.

R

Ung. Gall. cum. Opii.

— Conni.

— Hammamelis.

— Zinc. oxide

aa. ʒ. ii

N. B.—It should be inserted before defæcation to lubricate the part for the passage of stool, and should be applied after passing stool to heal up the ulceration if any.

Injection of Carbolic acid or distilled water into the piles is said to effect cure.

Med. Times and Hosp. Gaz. Nov. 28, 1896 contains a painless cure of piles :—

“Paint once daily with a 2 per cent. sol. of Nitrate of Silver.”

Dr. Samways has applied Collodion to external piles dropping it on fibres of cotton-wool which are spread over the piles each morning after defæcation. (*British Medical Journal Nov, 21, 1896.*)

In case of bleeding piles, the writer recommends injection of eight ounces of the following lotion :—

R

Ferri alum.	3i
Aq. Distil.	oi

Subsequently paint bleeding points with any of the following :—

1. Liq. Adrenalin, 1 in 1000.

Or

2. R

Tinc. Ferri perchloride	
Hazeline	aa 3.ii

Dietetic treatment.—

Patient should take plain, easily digestible farinaceous diet, vegetables and oatmeal porridge are good; laxative fruits *e g.*, raw or ripe papaya, bael, figs and cocoanut water are recommended.

Avoid meat, alcohol and spices.

A pinch of Pulv. “isargool” followed by two ounces of water morning and evening is very efficacious.

FISSURES & EROSIONS OF THE ANUS.

Fissures and erosions are located in the circumference of the anus with swollen edges and purulent bases.

The stools should be kept soft by the use of a suitable diet, laxatives and irrigations of oil.

Before defæcation, the rectum should be lubricated with oil.

Two best local medicines are :—

- (i) Silver nitrate in the shape of Nargol, Protargol.
- (ii) Pure ichthyol.

After cocainizing the part apply any of the above medicine.

- (iii) Emolentine ointment is very efficacious.

CATARRHAL JAUNDICE.

Jaundice is a general condition symptomatic of disease either of the liver alone (*hepatogenous Jaundice*) or of the liver and blood in association (*hæmo-hepatogenous Jaundice*), characterised by yellow discolouration of tissues with bile pigment.

Theories of Jaundice :—

1 Frerick's hypothesis.

Jaundice is due to accumulation in the blood of bile pigment which has been imperfectly oxidised. Bile constituents may accumulate in the blood in two ways :—

- (a) Increased absorption of bile into the blood.
- (b) Diminished consumption of bile constituents.

He considers that *bile acids* are the chief of these constituents and are the precursors of bile pigment which in turn

becomes oxidised in blood into urinary pigments. If the normal oxidising process is hindered, an excess of bile pigment will accumulate in the blood, and in this way Jaundice may arise independent of any obstruction.

The fault therefore lies entirely on blood which fails to oxidise the bile pigment normally absorbed.

2 Kuhner's theory —

Bile acids do not become converted into bile pigment, but that they liberate the hæmoglobin of red corpuscles and that the hæmoglobin is subsequently converted into bile pigment. Hence all agents capable of liberating an excess of hæmoglobin in the blood, are capable of producing Jaundice.

3. Suppression theory —

Suppression of biliary secretion as the result of some morbid action of liver itself, causes Jaundice.

The biliary ingredients are not eliminated and consequently accumulate in the blood

Varieties of Jaundice:—

1 Obstructive or Hepatogenous Jaundice :

A. Obstruction by foreign bodies within the duct :—

(a) Gallstone and inspissated bile.

(b) Hydatid and distomata.

(c) Foreign bodies from intestine.

B. Obstruction by inflammatory tumefaction of the duodenum or of the lining membrane of the duct with exudation into its interior.

C. Obstruction by stricture or obliteration of duct.

(a) Congenital deficiency or obstruction of duct.

(b) Stricture from perihepatitis.

(c) Closure of orifices in duct in consequence of duodenal ulcer.

- (*d*) Stricture from cicatrisation of ulcer of bile duct
- (*e*) Spasmodic stricture ?
- D. Obstruction by tumors closing the mouth of the duct or growing into its interior.
- E. Obstruction by pressure on duct from without by :—
 - (*a*) Tumor projecting from liver itself.
 - (*b*) Tumor of stomach, pancreas or kidney.
 - (*c*) Omental Tumor.
 - (*d*) Abdominal aneurism.
 - (*e*) Fæcal accumulation.
 - (*f*) Pregnant uterus.
 - (*g*) Ovarian or uterian tumor.

11, Non-obstructive or Hæmatogenous or Toxæmic Jaundice :

- A. Poisons formed outside the body.
 - (*a*) Phosphorus.
 - (*b*) Arseneureted hydrogen.
- B. Poisons formed inside the body in various specific fevers.
 - (*a*) Yellow fever.
 - (*b*) Malaria.
 - (*c*) Relapsing fever.
 - (*d*) Typhoid.
- C. Special ictero genetic poisons.
 - (*a*) Epidemic Jaundice.
 - (*b*) Weil's disease.
 - (*c*) Acute yellow atrophy of liver.
 - (*d*) Malignant Jaundice *e.g.*, Cancer. &c.

Catarrhal Jaundice is due to inflammatory swelling of the lining membrane of the bile ducts and the consequent obs-

truction to the outflow of bile into the intestine. The result being :—

I. On account of the presence of bile pigment in the circulation :—

- (a) Yellow complexion.
- (b) Yellow conjunctivæ.
- (c) Itching of the skin.
- (d) Greenish yellow coloured urine.
- (e) Slow pulse.
- (f) Yellow vision.
- (g) Bitter taste in the mouth.
- (h) Cerebral symptoms in severe cases.

II. On account of the absence of bile in the intestine :—

- (a) Clay coloured offensive stool.
- (b) Abnormal fermentation with the formation of gas in the intestine.
- (c) Gastro-enteritis.
- (d) Constipation.

Hence the physicians should be on the alert to restore order to the great gate-way of circulation.

1. By stimulating liver either directly or indirectly and thereby allow bile to flow into its natural channel.

2 By liver tonics, etc.

3. By removing the abnormal intruder—bile from the circulation.

For practical treatment it is grouped under two heads :

I. Acute.

II. Sub-acute

1, Acute catarrhal Jaundice

Internally :—

At the very onset give a brisk mercurial purge as follows :—

℞

Hydrarg : Subchloride	gr. v
Sodii Bicarb.	gr. x

Mft. for a pulv : Sig : at bedtime.

Repeat it once or twice a week till recovery to relieve congestion of liver and intestine ; on the following morning a good dose of Sodii phosph. effervescence in lukewarm water to hasten the action of bowels. It should be administered after calomel.

The writer strongly advocates the use of hepatic stimulants and saline hydragogue purgatives, and strongly condemns the use of quinine in this stage of the disease ; as there are symptoms of gastroenteritis, the use of salines in an effervescent mixture is well tolerated.

℞

Liq : Ammon Citratis	℥. ii
Acid Citric	gr. x
Syr lemon	℥. ss
Aq : aurantii floris	ad. ℥. ss

Mft. for a dose ; Sig : one with the following thrice a day.

℞

Sodii Benzoas	gr. v - x
— Phosph	℥. i
— Sulph	℥. i
— Bicarb	gr. xv
Aq. Chloroformi	ad. ℥. i

Mft. for a dose : Sig : one with the above thrice a day.

N. B.—Prof : Murchison recommended Ammon Chloride. gr. xx. two or three times a day to influence free diaphoresis and to diminish the portal congestion and pain ; so you can add it to the above mixture if required.

Writer's favourite formula :—

R

Ammon Chloride	gr. x
Sodii Benzoas	gr. v
— Phosph	ʒ i
— Sulph	ʒ. i
— Glycocholate	gr. iii
Glycerine	m. xv
Aq : Chloroformi	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day.

At bedtime give him in a routine fashion the following pill :—

R

Pulv. Euonemin	gr. ii
„ Iridin	gr. i
Resin Podophyllin	gr. $\frac{1}{4}$
Oil Menth pep	m. $\frac{1}{4}$
Pil Rhei Co	gr. i ss

Mft. for a pill : Sig : at bed time.

On the following morning the decoction of the following indigenous drugs. may be prescribed :—

R

Coriander (old)	$\frac{1}{2}$ tolla by weight
Palta	1 tolla
Khetpapa	2 tollas
Gulancho	3 tollas
Root of Bena	1 tolla
Kontakari	1 tolla
Red Sandal wood	$\frac{1}{2}$ tolla

Boil them in half a seer† of water after soaking for a couple of an hour, till it is reduced to half a chattack.

Dose half a chattack early in the morning on an empty stomach. The writer has systematically prescribed this with marvellous effect.

*Palta=leaves of *Patola* or *Trichosanthes Dico*, Khetpapa=*Syn. Oldenlandia biflora*, Gulancha—*Tinospora Cordifolia*; Benamul=*Andropogon muricatus*, Kantakari *Syn Solanum Jacquinie*.

†One seer is equivalent to 32 ozs , one chattack – 2 ozs.

Prof : Shoemaker remarks:

The drug *par excellence* in catarrhal jaundice to relieve the inflamed and swollen condition of the mucous membrane lining both the intestines and the various ducts of the liver is the fluid extract of hydrastis given in doses of twenty to thirty minims half an hour before each meal and at bedtime. This drug will not only act upon the involved mucous membrane but it will at the same time stimulate the dormant hepatic cells and liquefy the bile.

N.B.—1. Rectal injections of one or two pints of lukewarm water daily retained as long as possible, have been recommended to allay any intestinal irritation.

The injection of cold water (*temp. 60° F, gradually increased to 72° F,*) into the rectum slowly by means of an irrigator, from 40 to 50 ounces at a time, according to the tolerance of the patient, and retained as long as possible and often repeated, has been advocated by Krull (*and lauded by Dujardin-Beaumetz*) as a cure for catarrhal Jaundice.

(*Burney Yeo's Manual of Medical treatment Vol. ii P. 108.*)

2. Tabloid Fellis Bovini purificati :

Dose—one to be swallowed with little water twice a day after meal.

3. Ovogal (*a compound of bile acid from fresh ox bile and albumen*) brings rapid relief when administered in doses of $\frac{1}{2}$ to 1 gr. ; it acts by increasing the secretion of bile.

Locally : —

Warm linseed poultice over hepatic region followed by bandage.

Treat the patient symptomatically.

1. Gastro-enteritis :

R

Bismuth Carb	gr. iv
Pulv Acacia	q. s
Acid Hydrocyanic (Dil)	m. i
Sodii Citras	gr. iv
Aq. Chloroformi	ad. ℥. i

Mft. for a dose Sig : one when required.

2. Adbornal fermentation :

R

Salol	gr. iii
Sodii Bicarb	gr. x

Mft. for a pulv ; Sig one twice a day an hour after meal.

3. Itching of Skin :—

Warm sponging with carbolic lotion is recommended.

II. Sub-acute catarrhal jaundice.

Internally :—

Mineral acid treatment is best.

The following is the writer's favourite prescription :—

R

Ammon chloride	gr. x—xv
Acid Nitro muriatic (Dil)	m. x
Sodii Sulph	℥. i
Tinc : Podophyllum	m. v
Glycerine	m. xx
Aq. Chloroformi	ad. ℥. i

Mft. for a dose : sig. one thrice a day.

N.B.—1. Tabloid *Pilocarpinæ Nitratiss* gr. 1/10 thrice a day may be administered with the mixture. It should not be used in heart cases ; it should be stopped when toxic symptoms appear, *e.g.* salivation, etc.

2. Decoction of white "punarnava"† and old "mula" (*Raphanus sativus*—Garden Radish) may be used when the urine is vere scanty and is of a greenish yellow colour.

Locally :—

Nitro-muriatic acid bath over liver as follows :—

℞

Acid Nitro-muriatic (Dil)	℥ ii
Hot water	℥.x—xx

Mft. soak a flannel with it ; ap_l " it over hepatic region followed by bandage once a day.

During the stage of convalescence the following combination acts like a charm :

℞

Ammon Chloride	℥. iv
Acid Nitro-Muriatic (dil)	℥. iv
Liq : Euonymin et pepsin Co. }	
or	
Liq : Iridin et papain Co. }	℥. iv

Dose a teaspoonful in an ounce of water twice a day after meal.

N. B.—If there be a tinge of malarial, Quinine Salicylate gr v in the morning is allowable

Dietetic treatment :—

1. Milk and soda water equal parts.
2. Plasmon and milk.
3. Horlick's malted milk at night.
4. When fever is less and the patient is craving for food, bland starch diet is allowable *e.g.*—

(a) "Khoi Mund" with little honey and rose water.

(b) Washed loaf.

(c) Sago which has been strained and made into a thick pultaceous jelly and to which a little salt and juices of lemon or oranges have been added.

† White "punarnava"—*Boerhaavia Diffusa*.

5. Fruit juices.

6. Fat and fatty diets, meat and sugar are to be avoided.

Hygienic treatment :—

In prolonged cases careful nursing is urgently necessary:—

1. The patient should mostly rest in bed, but a gentle walk morning and evening may be practised.
 2. Clothing and bed sheet should be changed often.
 3. Room should be dry and well aired.
 4. Warm bathing or sponging from time to time is indispensable.
 5. Examine the stool and the urine daily, note change if any.
 6. Avoid exposure to chill.
 7. Avoid stimulants, *e. g.* alcohol, *ganja*, toddy, etc.
-

ICTERUS NEONATORUM.

Icterus Neonatorum *i. e.* Jaundice of the new-born infants, is of two kinds:—

I. Mild.

II. Severe.

1. Mild icterus.

Cause :—

1. Diminished pressure in the portal vessels, following the severance of the placental circulation, allows absorption of bile from the bile capillaries, in which the tension is greater.

2. Quincke's View :—

Ductus venosus may remain open : allowing some of the portal blood containing bile to flow into the systemic circulation.

3. Jaundice is hæmatogenous and is due to the destruction of large numbers of red blood-corpuscles during the first few days after birth.

Symptoms:—

Jaundice, colourless fæces, and bile-stained urine which as a rule, disappear within two weeks.

11. Severe icterus

Cause:—

1. Congenital absence of the common or hepatic duct.
2. Congenital syphilitic hepatitis.
3. Septic poisoning.

Treatment.—

Same as in Jaundice.

ICTERUS GRAVIS.

(acute yellow atrophy of the liver.)

Acute yellow atrophy of the liver is a malignant Jaundice characterised *anatomically* by extensive necrosis of liver-cells and *clinically* by jaundice, delirium, diminution of the liver volume and presence of leucin and tyrosin in the urine.

Classical symptoms are:—

1. Gastro duodenal catarrh.
2. Brain symptoms *e. g.* headache, delirium, convulsion.
3. Vomiting.
4. Hæmorrhages occur into the skin.
5. Fever.
6. Jaundice.

Treatment.

Medicine is of no avail in this grave disease.

CHOLELITHIASIS (GALL-STONE).

One of the important medical questions of the day is that of the causes and treatment of gallstones.

Old theory :

The formation of gall-stones is ascribed to a constitutional defect, which causes the liver to secrete abnormal quantities of bile containing a relatively insufficient proportion of bile-salts (*the solvent of cholesterin*), thereby giving an opportunity for the formation of a cholesterin deposit.

Näunyn's theory .—

The primary cause of the disease is an infection of the bile proceeding from the intestine and resulting in catarrh of the bile-duct and gall-bladder.

Glaser's theory —

Disturbance of secretory nerves and irritation of sympathetic glands of the liver, will result in a rich and mucous bile and allows cholesterin to be precipitated. Cholesterin and bilirubin-calcium then accrete around the mucous products of the inflammatory-process and thus gall-stones are formed.

Bacillary theory .—

Bacteria plays an important role in the production of gall-stones and the route by which the organisms gain entrance to the biliary tract, may be from the blood, either from the general or portal system.

Classical symptoms of gallstone colic :—

Sudden onset of a severe colic in the region of gall-bladder, accompanied by well-defined Jaundice, rigor with or without fever and enlargement of gallbladder.

Varieties of inflammation of the gall bladder ;—

1. Serous or catarrhal form.

This clinical form is characterised by a remarkable tendency to pass into the latent, or quiescent stage, where

the patient is free from trouble. The patient may have experienced single or repeated attacks and continues to be well for the rest of his life.

Keher estimates that about 80 per cent take this course.

Medical treatment is of avail in this clinical form of the disease.

2. Purulent, phlegmonous and gangrenous form.

If the efforts of nature fail to accomplish the expulsion of the stone, if the acute obstruction of the common duct becomes chronic or a local peritonitis round the gall-bladder a pericholecystitis is developing, operative interference is imperative.

In the treatment of cholelithiasis four problems require to be solved :

- I. The alleviation of pain in the attacks of colic.
- II. The promotion of the process of passing stones which have already been formed.
- III. The prevention of the formation of new stones.
- IV. The reduction of the inflammation of the biliary system.

The treatment falls under the category of two broad divisions:—

1. *Palliative.*

2. *Curative.*

- | | | | | |
|---------------|---|----------------|---|-------------------------|
| 1. Palliative | { | 1. Preventive. | { | i. Dietetic. |
| | | | | ii. Hygienic |
| | { | 2. Medical | { | i. during an attack, |
| | | | | ii. between the attacks |
| 2. Curative | { | 1. Medical. | { | i. during an attack, |
| | | | | ii. between the attacks |
| | | 2. Surgical. | | |

Dietetic treatment :—

The diet should be light and nutritious: patient should take it at regular hours with frequent intervals.

N.B.—1. Avoid sweet and starchy food.

2. „ rich dishes.

3. „ spices.

4. „ alcohol.

Hygienic treatment :—

Heredity, geographical conditions, tight-lacing, want of exercise, physical over-exertion, general incipient marasmus and infection are the predisposing causes of the disease. Rest, both physical and mental, fresh air and warm bath are indispensable. Dr. George Harley advocates the use of massage; he recommends that gallstones are to be expressed from the gall-bladder by digital manipulation: this plan of treatment is highly irrational.

Dr. Lauder Brunton recommends a tumblerful of natural Carlsbad water with a little hot water before breakfast, and a tumblerful of simple hot water before the later meals. It stimulates peristalsis, increases flow of blood to the abdominal organs.

The following combination early in the morning on an empty stomach acts well:

R

Sodii Salicylate	gr.iii
„ Benzoate	gr.v
„ Sulphate	ʒ.i
„ Phosphate	ʒ.i
„ Bicarb	gr.xv
„ Chloride	gr.vi
Aq: Chloroformi	ad ʒ. j.

Mft. for a dose Sig: early in the morning.

Fachingen water, *Context. vil.*: natural mineral water are spoken of highly by some physicians. Sodii Phosph effervescence (*P. D. & Co.*) a cupful early in the morning in lukewarm water acts nicely.

During an attack :—

Hypodermically :—

Tabloid Hypo. Morphinae Sulph. gr. $\frac{1}{4}$ — $\frac{1}{2}$.

Internally :—

1. Drink a pint of water as hot as it can be taken.
2. The following is the favourite combination of the writer.

R

Heroin hydrochlor	gr. 1/12
Spt. Etheris Co.	m. xxx
Spt. Chloroform	m. xv
Tinc. Carminative	m. x
Aq. Aurantii floris	ad 3. i

Mft. for a dose : Sig one every two hours up to 2 or 3 doses.

3. The following prescription has been recommended in *Allbutt's System of Medicine*.

R

Exalgine	gr. j
Hot water	ad 3. j

Mft. for a dose : Sig : every half an hour for 3 or 4 doses.

4. 20 to 30 grams of Cognac and yolks of two eggs act as an anodyne.
5. Half to one ounce of glycerine relieves attacks of hepatic colic.

Externally :—

1. Hot fomentation over hepatic region.
2. Warm linseed poultices over hepatic area.
3. Chloroform stup to alleviate pain.
4. Injection into the rectum of large quantity of water.

Between the attacks —

Internally :—

Open the bowel by calomel, then prescribe any of the following :—

1. Olive oil : 2 to 10 ozs. daily.

Better to begin with 2 drachms every three hours up to 3 ozs. in 24 hours.

2. Oleic acid m viij in capsule morning and evening for ten days, then a period of rest for twenty days.
3. Sodium glycolate gr v. in paper catchet thrice a day after meal : the writer finds it an infallible drug in this disease.
4. Dr. Langheld in the April number of the "Therapist", 1907, recommends Bilitin.

"About 6 to 7 hours after taking Bilitin there had appeared in all the cases diarrhœa-like stools. Every one of the five patients experienced considerable relief after the setting in of the effect, and the pains were no longer felt, even upon strong pressure"

Bilitin is free from after-effects, is a cholagogue and renders chemical verification of calculi

5. Cholelith pill (*P. D & Co*)

The formula of which is given below :

Rx

Phenolphthalein	gr. $\frac{1}{2}$
Acidi sodii oleatis	gr. i. ss
Sodii salicylas (from	
Natural salicylic acid)	gr. i. ss
Menthol	gr. $\frac{1}{10}$

or

Phenolphthalein	gr. $\frac{1}{2}$
Sodii oleat acid	gr. j
Acidi salicylic pur	gr. i. ss
Menthol	gr. j

Mft. for a pill.

N. B.—Natural salicylic acid and sodii oleat acid are (i) cholagogue (ii) solvent of concretion and (iii) biliary disinfectant.

Menthol and phenolphthalein act by promoting intestinal activity.

Dose :—2 pills are given night and morning followed by a glassful of hot water : take plenty of hot water in the interval of treatment.

6 Belladonna has been said to have a specific action.

R

Ext. Belladonna	gr. $\frac{1}{4}$
Resin podophyllin	gr. $\frac{1}{4}$

Mft. for a pill : Sig : one thrice a day

7. Durand's drop : It consists of one part of turpentine and four parts of ether in capsules. The dose is 15 to 60 drops Stop the medicine when there is vomiting.

8 Prof. H. Senator of the University of Berlin (*Forlia Therapeutica*, April 1909) recommends the following :—

R

Sapo medicat	grm. x—xv
Mucilag mimos	q. s. ft 100 pills
Pulv. cinnamomi	q. s

Dose : Three pills to be taken daily immediately after meal

N.B.—Sapo-medicatus is in reality a combination of sodium with oleic acid and small quantities of margaric acid, and is neutral in reaction.

9. Dr. W. Bauermeister recommends Probilin.

Dose :—3 to 4 pills with a half to a pint of warm water, morning on rising and evening before retiring.

10. Dr. Otto Preich of Berlin (*Deutsche Aerzte-Zeitung* Sep. 1909) advocates the use of chologen as was formulated by Dr. Glaser of Muri : its principal ingredients are mercury, podophyllin, essential oils such as cumin melissa, camphor, etc.

The mode of administration is as follows :—For ten consecutive days the patient takes at mid day and in the evening before meals one or two tablets of No. 1

PANCREATIC CALCULUS.

Pancreatic calculi are chiefly composed of phosphorus and carbon salts.

Classical symptoms are :—

1. Pain or discomfort is felt in the upper abdomen, generally at or near the middle line. The pain frequently comes in sharp colicky attacks, similar to, but less severe than those due to gall-stones. When the pain is at its height there may be :—

- (a) Vomiting.
 - (b) Hiccough.
 - (c) Rigors
 - (d) Cold sweat, or collapse.
2. Fatty stools
 3. Temporary diabetes

Treatment:—

The subcutaneous injection of pilocarpine incites the flow of the pancreatic juice and is highly recommended by the writer.

TROPICAL HEPATITIS :

Tropical hepatitis is characterised *anatomically* by the formation of one or more large foci of microbic necrosis at first diffuse, but afterwards limited by a pyogenetic membrane and *clinically* by febrile hyperæmia associated with dysentery or independent of it, and terminating in resolution or

suppuration. Hence for practical treatment there are two types of hepatitis, *viz* :—

- | | | | | |
|-----------|---|--|---|---|
| 1. Acute. | { | i. <i>Active.</i> | { | (a) due to gastro-intestinal causes, <i>e.g.</i> , catarrh of intestine, rich food, alcohol etc.
(b) Due to toxic causes <i>e.g.</i> , malaria, dysentery. |
| | { | ii. <i>Passive</i> , due to cardiac causes specially of mitral origin. | | |

2. Suppurating.

1. **Acute hepatitis** is characterised by the constitutional and local symptoms. It is regarded as a febrile congestion resulting from the absorption of ptomaine from the bowel.

Constitutional symptoms are :—

- (a) Hectic rise of temperature.
- (b) Coated tongue.
- (c) Constipation.
- (d) High-coloured urine.
- (e) Gastric disturbance.
- (f) Slight Jaundice.

Local symptoms are :—

- (a) Pain radiating to right shoulder through the Nerve—External Respiratory Bell.
- (b) Tenderness usually increased on pressure,
- (c) Uniform enlargement of the liver.

N.B—If these symptoms do not subside spontaneously or as the result of treatment, suppuration is to be feared.

2. Suppurating hepatitis :—

Classical symptoms are :

- (a) Rigors.
- (b) Sweating.

- (c) Bulging and painful enlargement in some part of hepatic region.
- (d) Fluctuation.
- (e) Decubitus, *i.e.*, the patient is seldom able to lie on either side without suffering.

Acute hepatitis :—

Prophylactic :—

Room should be large and airy ; avoid exposure to heat or chill ; clothing should be adapted to the season : avoid too much, too little and highly seasoned dishes ; avoid meat and alcohol. Pomello is recommended.

The writer recommends the following powder as an excellent tonic in torpid condition of the liver :

Pour raw *papaya* juice to an equally proportioned powders of rock salt (*Saindhav laban*) and Beet salt (*Beet laban*), sufficient to soak them , dry them in the sun. Repeat this process for seven days alternately soaking and drying

Dose—gr. v—x twice a day before meal.

Medical ;—

Internally :—

1. Open bowel by calomel followed by saline draught in the morning.
2. Writer's favourite formula :

R

Ammon chloride	gr. xv
Sodii sulph	ʒ. j
Tinc. podophyllum	m. v
Ext : Boldo liq	m. x
Liq : Euonymin et pepsin Co.	ʒ. j
Aq. : Chloroformi	ad. ʒ. j

Mft. for a dose : Sig : one thrice a day.

3. Ipecacuanha treatment :

A generation ago Maclean and Norman Chevers recommended large doses of the drug in acute hepatitis actually in order to prevent suppuration taking place, but for some reasons this practice has fallen into abeyance, till recently Leonard Rogers revives the use of this valuable drug in pre-suppurative amoebic hepatitis (*Therapeutic Gazette*, June 1909.)

Amoebic abscess of the liver is a preventable disease ; the first sign of improvement will be a marked diminution of hepatic pain, then fever begins to fall and lastly the size of liver will be decreased.

The usual method is to give ipecac as a powder 5 -15 grains some 20 minutes after a dose of Tinc. of Opium, or better 20 grains of chloral hydrate : no food or drink being given for several hours before and after, the patient being kept as quiet as possible and instructed to try not to vomit. Give it once a day for one or two weeks after the temperature falls to normal, and smaller doses for sometime longer in the more acute cases.

The drug is given in keratinized capsules, which do not dissolve in the stomach, but carry the drug into the bowel.

The physiological action of ipecac is unknown.

4. Benzo-naphthol gr. ii is to be administered in the interval between the exhibition of ipecac.

5. James Cantlies formula :—

R	
Ammon Chloride	gr. xx
Pot : Iodide	gr. v
Pot · Bromide	gr. v
Ext : Taraxaci liq :	℥. ss
Aq : Chloroformi	ad. ℥. i

Mft. for a dose : Sig : one thrice a day.

Locally :—

1. Lin : Iodi to be painted over the hepatic area.
2. Nitro-muriatic bath over liver region.
3. Hot fomentations or a very large poultice changed every 3 hours is useful.

II. Suppurating hepatitis.

Operation is the usual rule. Some surgeons recommend the withdrawal of pus by an aspirator and injection of 20 grains of bihydrochlorate of Quinine into the cavity once. 15 grains of calcium chloride should be given half an hour before operation. If for some reasons or other the abscess be left to nature, it will burst either in the lungs or intestine. In the former the prognosis is better than that of the latter, as the pus has to pass through several aseptic media of the respiratory tract, while in the latter intestine is full of sepsis.

Auto-vaccine treatment has been highly recommended of late years.

Thus we see that liver abscess may burst either into the lung or intestine.

Liver abscess bursting in the lung —

Internally :—

The writer recommends the following :—

R

Ecthol	ʒ.i
Pot Iodide	gr.v
Ammon chloride	gr.x
Liq : Iridin et Papain Co.	ʒ.i
Aq. : Camphoræ	ad. ʒi

Mft. for a dose : Sig : one thrice a day.

Ecthol is alterative, antiseptic, tonic, stimulant and sedative, and therefore is indicated, while potassium is absolutely necessary.

Inhalation :—

R

Ol. Eucalyptus	ʒ. ii
Ol. Terebinth	ʒ j
Acid carbolic	ʒ. ss

Mft. to be sprinkled over cotton for inhalation.

Gargle :—

- (i) Odol.
- (ii) Listerine.
- (iii) Glycothymolin.

Hæmoptysis :—

℞

Hazelline	m. x
Ext : Ergot liq :	m. x
(Hewlett's.)	
Sodii Sulph :	gr. xv
Liq : Morphin Hydroch.	m. x
Liq : Euonymin et pepsin Co.	ʒ. j
Aq : Chloroformi	ad. ʒ. j

Mft. for a dose : Sig : one thrice a day.

Fever :—

℞

Sodii Benzoas	gr. v
Salol	gr. iii
Quinine Hydroch.	gr. iv

Mft. for a pulv : Sig : one thrice a day.

During Convalescence :—

(i) ℞

Guaiacol Benzoas	gr. v.
------------------	--------

Mft. for a pulv : morning and evening.

- (ii) Iron and arsenic in the shape of arsenio ferratose.
- Dose a teaspoonful twice a day after meal.

Liver abscess bursting into intestine :—

Keep the intestine aseptic as far as practicable by salol, Benzonaphthol, etc.

Hygienic-treatment :—

Rest is indispensable to prevent the diaphragm moving over the top of the liver. The patient must lie in the horizontal position. To fix the lower part of the chest, strapping is an

excellent means. During convalescence a fair amount of exercise should be taken daily in the open air, but overfatigue is to be guarded against.

Dietetic treatment :—

Food should be bland and simple :

Dr. James Cantlie on the other hand remarks :—

“ Starchy foods must be withheld.

Avoid butcher's meat and fat: but the *Clinical Journal* 1898 No. 295. page 161 contains the following lines :—Animal food in its most digestible form is the keynote of successful dieting.”

Milk foods, fermented milk, fish, eggs, chicken, games, and little raw-meat juice are allowed. As drinks, hot water and weak freshly-made tea with lemon are the best. Diluents should be taken freely, barley-water or milk diluted with vichy or soda water is the best, and every morning before getting up half a pint of warm water should be sipped slowly. The writer strongly recommends luke-warm *butter milk* to be taken *ad libitum*.

CIRRHOSIS OF LIVER.

We know from the pathology of the disease that fibrous connective tissue constitutes *Materia peccans* in cirrhosis. No medicines at our disposal can alter or remove the cicatricial connective tissue (Prof. Osler M. D., F. R. C S). The so-called cures of atrophic cirrhosis means the re-establishment of circulatory balance.

Varieties of Cirrhosis :

1. Multilobular or atrophic cirrhosis of Lænnec.

A coarse network of fibrous tissues permeates the whole organ, enclosing in each mesh a number of lobules and hence called multilobular.

Classical symptoms are :

- a.* Ascites in about 80 per cent.
- b.* Irregular bowels.
 - (i) Constipation : because there is much fluid in peritoneum and hence little fluid in the intestine.
 - (ii) Diarrhœa : due to the presence of gastro-intestinal catarrh.
- c.* Hæmatemesis, melina and hæmorrhoids.
- d.* Spleen enlarged.
- e.* Hepatic facies.
- f.* High coloured scanty urine.
- g.* Enlargement of superficial vein.

11 Unilobular or hypertrophic cirrhosis.

A fine network of fibrous tissues tends to surround individual lobules and hence called unilobular cirrhosis.

French writers term it *biliary* cirrhosis.

Classical symptoms are :—

- a.* Fever.
- b.* Jaundice .
- c.* Hepatic pain.

Treatment of atrophic cirrhosis.

A rational plan of treatment will be—

I. Remove the cause.

II. Restore failing compensation.

I. Remove the cause

- (*a*) Alcohol and toddy should be stopped altogether.
- (*b*) Remove the patient from malarial district and treat him with Quinine Salicylates.
- (*c*) Treat the syphilitics with Hydrarg, and Iodides.
- (*d*) Remove source of gastro-intestinal auto-infection,
 - e. g.* putrid 'meat, fish, shell-fish, or contaminated water etc.

Under the influence of the microbes in the alimentary canal with this putrid stuff, the gastro-intestinal ferments give rise to a series of poisons—butyric, acetic, valerianic, lactic and oxalic acid, etc. without counting indol, phenol, skatol and the toxins manufactured by the microbic agents, notably by the coli bacillus.

Hanot says :—

“The very interesting researches of Boix prove that the organic acids of digestion may produce hepatic cirrhosis, some more easily than others. In the normal state the liver resists these daily poisons. If it grows feeble, or if it is already weak *ab ovo*, the toxic action takes place, and hepatic cirrhosis by auto-infection of a gastrointestinal origin supervenes”.—

(*A text book of Medicine by G. Dieulafoy. Vol 1 page 893.*)

11. Restore failing compensation, by.

[1] Liver tonics and alteratives.

[2] Natural elimination.

(i) Purgatives.

(ii) Diaphoretics.

(iii) Diuretics.

(iv) Paracentesis ; either by steel trocar or ‘vegetable’ trocar [Apocyanum].

N.B.—By tapping we remove both fluid and albumen, but by apocyanum we remove only fluid but no albumen.

Prof : Cardarelli advices :—

(i) To stimulate the functions of kidneys by diuretics.

(ii) To use drastic cathartics to produce a copious diarrhoea.

(iii) To keep intestinal tract aseptic.

[3] Proper dietetic treatment.

[4] Climatic change.

1. Liver tonic and alterative.

(a) R

Sodii Benzoas	℥. ii
Glycerine	℥. iv
Mag. Sulph	℥. iss
Ext. Apocyanum Liq.	℥. ii
Spt. Etheris Nitrosi	℥. iv
Inf. Scoparia	ad. ℥. viii

Fiat mixtura. Put 12 marks. Sig :—one thrice a day.

(b) In enlargement of liver :—

R

Pot Iodide	gr. v—x
Ammon chloride	gr. xv
Spt. Etheris Sulph.	m. xv
Ext. Apocyanum Liq	m. x
Sodii Sulph.	℥. i
Inf. Scoparia	ad. ℥. i

Fiat mixtura. Sig :—Thrice a day.

(c) In syphilitic cases :

R

Donovan's Sol.	m. x
Pot. Iodide	gr. v—x
Syr. Trifolium Co.	℥. ii
Dec. Sarsa Co.	ad. ℥. i

Fiat mixtura. Sig :—twice a day.

The basis of the treatment of cirrhosis consists in the milk diet and the iodine, and if persisted in faithfully for a long enough time we can expect good results.

(*Twentieth Century, Practice of Medicine Vol. ix, page 599*).

Writers' favourite formulæ.

R

Pot Iodide	gr. iii
Sodii Iodide	gr. iii

Mft. for a pulv : to be taken with milk thrice a day.

(d) In malarial cases :—

Quinine Salicylas grains 5 early in the morning

2. Natural elimination.

(i) Purgatives :—

(a) \mathcal{R}

Pulv. Jalap Co. 3 i

Pot. Acid Tartarate 3 i

Fiat pulv. Sig.—One at bed time when constipated.

(b) \mathcal{R}

Pot. Bicromate gr. i

Pulv. Euonymin gr. i

Resin podophyllum gr. 1/6

Ext. Gentian q. s

Fiat pill : Sig.—one at bedtime.

(ii) Diaphoretics :

Hot vapour bath is best.

(iii) Diuretics :

Anasarcin : Dose :—one tablet twice or thrice a day.

(iv) Paracentesis :—

(a) When there are urgent complaints *vis.* dyspnœa, displacement of the Apex &c. remove much fluid by tapping and allow the rest to be absorbed gradually.

N.B.—Don't remove all the fluid from abdomen, as the abdominal veins which were so long compressed under pressure of fluid, suddenly dilate and may lead to heart failure.

(b) Injection of Adrenalin sol. as advocated by Dr. James Barr of Liverpool. Empty the peritoneal cavity as far as possible by tapping through a two way canula, then inject by means of an exploring syringe one drachm adrenalin chloride sol. [1 in 1000] diluted with half an ounce of sterilised water. The canula is then withdrawn, the opening in the abdomen being sealed with collodium.

If the fluid collects again, the operation should be repeated.

The injection of Adrenalin sol. usually causes sharp pain in the abdomen and a rise of temperature $\frac{1}{2}$ to 2 degrees. [Dr. H. W. Plant reports 5 cases thus treated. *British Medical Journal* July 15, 1905]

- (c) Autoserotherapy of Ascites.—Drs. Audibert and Monges (*Presse Medicale* Feb. 2, 1910. *Ref. Jour. Amer. Med. Asso.* March 12, 1910). The technic is similar to that of Gilbert in tuberculous pleural process. They describe a case of ascites of hepatic origin in which benefit was derived from reinjection of the patient's own ascitic fluid, commencing with 3cc. and never surpassing 10 cc. The injections were made in at intervals of about 6 days and 12 injections were made in all. There was no pain, no local reaction, nor any apparent influence on the temperature or on the elimination of chlorides and urea. The main effect was a copious and persisting polyuria which brought about notable improvement in the general condition as the ascites was drained away. They withdrew salt from the diet, and they emphasize the injurious action of injected salt in ascites resulting from liver disease. They now apply this autoserotherapy in all cases of recurring ascites. The fluid is aspirated and then the tip of the needle is partly withdrawn and diverted and the fluid reinjected into the subcutaneous tissue.

Ascites, Intravenous Autoserotherapy.

- (d) The authors found it possible, in 2 cases of atrophic cirrhosis with ascites, to prevent reaccumulation of the fluid and greatly improve the general condition of the patients by administering, intravenously, massive injections of ascitic fluid. Every ten days or two weeks 300 to 500 grams (10 to 16 ounces) of fluid were removed and at once injected into one of the arm veins. Improvement was not marked until after the fifth or sixth injection. One

of the patients, thus treated for four months, appears to have been cured. The other is still under treatment. In these cases all measures previously tried—repeated simple punctures, subcutaneous injections of ascitic fluid, diuretics, salt-free diet, etc.—had failed. The treatment was painless and led to no unpleasant effects. The nonmicro-organismal nature of the ascites should, however, be first ascertained by injection of the fluid into guinea-pigs. Sicard and Galup (*Societe medicale des Hopitaux ; Bulletin medical*, February 18, 1911).

- (e) Recently surgical measures have been adopted for the artificial production of peritoneal adhesions for the establishment of the collateral circulation [H. D. Rolleston M. D., F. R. C. S. and G. R. Turner F. R. C. S., *The Lancet* December 16, 1899].

N.B—1. Hepatic extract has been recommended in atrophic cirrhosis with Ascites. (*Medical Annual* page 34, 1902).

2. Calcium hippurate has been spoken off highly by Dugardin Beaumetz in cirrhosis of liver with congestion.

R

Hippuric acid	grames xxv
Aq. Calcis q s. to neutralise	
Syr. simplex	grames 500
Syr. Lemon q. s.	

Fiat mixtura. sig.—4 to 6 dessertspoonfuls a day.

3. Fibrolysin has a selective action on pathological fibrous tissue, causing in it a softening process which facilitates the absorption or stretching of such cicatricial formations : it is sold in boxes of ten ampoules (*Merck*) ; each ampoule contains 37 minims of 15 per cent, aqueous sol. of fibrolysin. This corresponds to three grains of theosinamin : it is best administered by subcutaneous or intramuscular injection.

The writer argues why this medicine should not be used in cirrhosis of liver characterised by the growth of abnormal fibrous tissue. He recommends his fellow brethren to have a trial of this valuable medicine before concluding any definite decision.

Treat the patient symptomatically—

1. Vomiting and catarrhal condition of stomach—

R

Bismuth carb	gr. x
Mag. carb	gr. v

Fiat pulv Sig.—One as required to be taken suspended in milk.

2. Flatulency.

(a) Thymol in pill form.

(b) Sodii Sulpho carbolas in mixture

3. Anasarca.

R

Pill Hydrarg	gr ii
Pulv. Digitalis	gr. i—ii
Pulv. scillæ	gr. i
Ext. Hyoscyamus	gr. ½—i

Fiat pill No 1 Sig—twice a day.

4. Hæmatemesis and Mælina.

As a rule hæmorrhage is not fatal : it is Nature's method to expel blood and thereby lowers blood pressure.

Hygienic treatment:—

(a) Absolute rest in bed.

(b) Room should be made dark.

(c) Remove all sympathetic friends and relatives.

Hypodermically :—

Morphin and atropin tabloid to check peristalsis

Locally :—Ice bag over epigastric region.

Internally :—

(a) A little ice to suck when thirsty.

Sir Dyce Duckworth (*Lancet* October 29, 1910) remarks :—

We await the closing of any oozing vessel or arterial twig by clot, and this delicate process must not be disturbed by matters of any kind introduced into the stomach. These are apt to excite secretion of gastric juice, which is unfriendly to a sore surface. Nothing whatever is to be given by the mouth, not even iced water or pieces of ice.

(b) Flush the colon with sterilised water very gently to expel the tarry blood.

(c) Stop all food by mouth for about a week but you can give fruit juices on 3rd or 4th day.

Have rectal feeding for about a week.

(i) Milk peptonised with Fair child's peptonising powder.

(ii) An egg beaten up with two drachms of Vini Gallici add prepared Benger's food and milk 4 ounces.

(iii) One ounce of Panopepton, one quarter warm milk, a pinch of salt for rectal feeding.

N.B.—Dr. E. J. Spigg tells us that even nutrient enemata excites secretion of gastric juice.

(d) Liq. Adrenalin Hydroch (*1 in 1000*) P. D. & Co. Dose ten drops every 3 hours or a tabloid of Hemesin of gr. 1-64 B. W. & Co. Every 2 hours upto 4 or 5 doses a day.

(e) Calcium chloride or better calcium lactate, Hazelline, Tinct. ferri perchloride &c are recommended by some physicians. They are no doubt best hæmostatics but the writer has the bitter experience of observing nausea and even vomiting in some cases.

During convalescence :—

R

Acid Nitro Hydroch Dil.	m. x
Tinct. Nucis Vomica	m iv
Liq. Iridin et papain Co.	ʒ. i
Inf. Gentian Co.	ad. ʒ i

Fiat mixtura Sig.—twice a day after meal.

Dietetic arrangement..

Plainly cooked bland diet is best

(a) R

Dried pulv. of "Mun"	2 tollas
"Job"	1 "
Milk	1½ poas.
Water	1½ "

Sac. Lactas a pinch

Boil the mixture till it is reduced to 1½ poas. Dose—ad libitum.

(b) Milk and soda water.

A B —Milk is the best diuretic

(c) Washed loaf.

Dried pulv. of, "Mun"

Fried "Atap" rice.

Mix them into a soft pultaceous mass and add little rose water for flavour ; and little honey for sweetening.

(d) Fried 'paddy' minced or 'chura' mund, to be mixed with warm milk and little sac. lactas.

(e) Allenbury's diet is very effecient ; it is simply a pancreatised milk.

(f) Oat meal porridge is good.

N B.—Avoid meat, soup, broths, alcohol and much water.

Climatic change.

Residence by sea side with moderate climate like Waltair is recommended. A dry laterite soil with an elevation ranging from 1000 to 2000ft. like Giridhe, Modupore, Hazaribag etc, is also good.

Don't send the patients to hills ; they are so to speak the grave yard of the dropsical.

Treatment of hypertrophic cirrhosis.

The treatment is practically the same as of Catarrhal Jaundice.

(*Vide my article on Jaundice.*)

INFANTILE LIVER.

Before describing the treatment of infantile cirrhosis the writer thinks it better to write a few lines of the disease.

It begins generally during dentition ; it is more common amongst Hindus than Mahomedans , it is fatal between 4 to 8 months ; it runs in families and several children are affected ; as a rule children of the well to-do and of the middle classes become the victim of this fell disease ; the witer is of opinion that early marriage, half naked dress of children, and moist damp climate of Bengal add fuel to the fire of the disease.

A girl of 12 whose bones are not yet fully developed, becomes the mother of a baby ; and what kind of fruit can you expect from such a tree ? An ill-formed, ill developed mass of flesh and bone , and liver being the main gate-way of passing food into the circulation, is first affected, hampered, injured and cirrlosed.

Dress no doubt plays an important part in the role of the disease ; either the child should be left to nature i. e. undressed like that of the poor or properly dressed from top to toe.

Its true cause is still shrouded in obscurity ; probably some irritants are absorbed from gastro-intestinal tract which degenerates the cells of the liver and subsequently increase inter-cellular connective tissue, and later of portal sheath (*Gibbon*).

Hence the rational plan of treatment would be :—

1. Remove the child from an endemic locality
2. Complete change of food.
3. Engage a healthy wet nurse.
4. Medicine is to be used merely as a whip for the tired horse of vitality.
1. Writer recommends dry laterite soil (*vide the article on cirrhosis of liver*)

2. (1) Pearl barley a teaspoonful

Milk of one cow 4 Ounces.

Mellin's food a teaspoonful

Water add 8 ounces :

Boil till water is reduced to one third

Dose : ad libitum :

(ii). Sanatogen and milk,

(iii). Horlic's Malted milk.

(iv). Luke warm "ghole" (*butter milk*).(v) Drop dose of garlic juice with milk once a day ;
it stimulates the function of the liver

3. Examine carefully that the wet nurse is not diseased.

4. Any of the following combination acts well.

- (i). R

Pulv Euonymin	gr. i
Pulv Euquinine	gr. $\frac{1}{2}$
Salicin	gr. i
Sac : Lactas	gr. ii

Mft. for a pulv : Sig : One thrice a day.

- (ii). R

Hydrarg. cum cretæ	gr. $\frac{1}{2}$
Pulv Ipecac syn emetin	gr. $\frac{1}{4}$
Salicin	gr. i
Sac : Lactas	gr. iii

Mft. for a Pulv : Sig : one thrice a day.

- (iii). R

Quinine Salicylas	gr. i
Sodii Benzoas	gr. ii
Leptandrin	gr. $\frac{1}{2}$
Sodii phosph	gr. vi
Ol anisi	m $\frac{1}{2}$

Mft. for a Pulv : Sig : one thrice a day.

- (iv). When pulse is very feeble prescribe a stimulent
- e.g.*
-
- Cognac, 1848 (
- it contains Ozonised ether*
-) : Dose
-
- 5 to 10 drops with milk thrice a day.

- (v). During convalescence the writer strongly recommends Cream of Malt with Codliver Oil and hypo-phosphites (*Oppenheimere & Sons*) minim xx twice a day to be gradually increased to a drachm or so
- (vi) Virol is an excellent adjuvant.

Its essential constituents are:—

- (a) Yolk of eggs.
 - (b) Red bone-marrow.
 - (c) Ext. of malt.
- (vii) Ext. of Red bone-marrow (*Armour's*) is very efficacious.
-

Diseases of the Circulatory System.

CHAPTER V

ANGINA PECTORIS.

Angina is a form of pain in the præcordial region, radiating in other directions especially towards the left shoulder and along the course of the left ulnar nerve, with a feeling of great anxiety, of oppression with more or less dyspnœa, and with pallor of the face and variations in the pulse, and is associated with a number of morbid conditions of the heart and vessels, more particularly with atheromatous changes in coronary vessels

Before describing the treatment the writer thinks it better to state the theories which so to speak flood the pages of medical literature

1. *Nervous theory* :—Neuralgia of cardiac nerves.
2. *Vasomotor theory* :—A sudden rise of tension in the systemic arteries.
3. *Myocardial theory* :—Cramp of heart muscles.
4. *Artirial theory* :—Spasm of coronary arteries.
5. *Diathesis theory* :—Gout of heart

In the treatment of angina pectoris, the physician should bear in mind the following points :—

- (i) To lower arterial blood pressure.
- (ii) To carefully regulate bowels.

Angio-sclerosis creeping on slowly but surely, "With no pace perceived" is the nemesis through which nature exacts retributive justice for the transgression of her laws—coming to one as an apoplexy, to another as an early Bright's disease, to a third as an aneurism, and to a fourth as angina pectoris, too often slitting "the thin spun of life" in the fifth decade, at the very time when success seems assured,

For practical purposes the treatment comes under two sub-divisions : *prophylactic* and *medical*.

Prophylactic treatment.—Avoid all strain physical and emotional, over-excitement, moral errors, dissipation, excesses in tobacco-smoking, tea, coffee and alcohol ; avoid hurry in meals and worries of life as much as possible , remove all gouty and other blood contaminations , avoid exercise immediately after meal, and cold baths as advised by Lyon in *Therapeutic Gaz.* Oct. 1898.

Medical treatment.—It embraces.

1. Prevention of an attack.
 2. Treatment during an attack.
 3. Treatment between attacks.
1. Prevention of an attack :—

R

Erythrol-tetranitrate	gr. j
Vini Gallici	ʒ. j
Aq. Destil	ad. ʒ. i

Mft. for a dose : tension begins to fall in 2 or 3 minutes.

2 Treatment during an attack :—

Ethyl chloride spray over painful part and heat on chest by hot bottles, which may be replaced by mustard poultice, be applied locally.

Prof. Lauder Brunton recommends amylnitrite. Ether may be inhaled. The capsule of amylnitrite should be broken in an handkerchief and be inhaled when required.

Nitro-glycerine tabloids, one every hour upto 3 or 4 and

R

Liq. Trinitrin	m. 1/100
Nitrite of Amyl	m. 1/4
Menthol	gr. 1/50
Capsicum (oleo resin)	gr. 1/100

To be given in capsules internally. One capsule is to be given every two hours,

Engstad states that in angina pectoris, cactus is almost a specific. Many cases of angina pectoris are the result of partial failure of the heart, here cactus grandiflora will often relieve the anginal pain by giving the heart, the necessary strength to maintain the arterial tension without becoming exhausted and tends to prevent their recurrence by giving tone to the vasomotor centres.

In hysterical cases, valerianate of amyl $2\frac{1}{2}$ grs. in capsule acts like a charm. It should be given four times a day to diminish dyspnœa.

3. Treatment between the attacks :—

Open bowels by salines when required. Huchard recommends iodides, and Murrell recommends nitroglycerine. The ideal plan of treatment would be to continue potassium iodide grs. 10 to 15 thrice a day before meal in half a glass of water for 20 days, then prescribe nitroglycerine tabloid thrice a day for 10 days in a month. Balfour asserts that arsenic is indispensable in all forms of weak heart accompanied by pain. It is contra-indicated in cases of fatty degeneration of heart. Matthew Hay recommends nitrite of sodium and Hale recommends cactus in hypertrophy of the heart with enlargement, while digitalis in hypertrophy with dilatation

If angina be associated with arterio-sclerosis, the following combination is indicated.

R.

Pot. Iodide	gr. ii
Sodii Iodide	gr. ii
Ferii Iodide	gr. $\frac{1}{2}$
Strontium Iodide	gr. $\frac{1}{4}$
Aq: Destil,	ad. \mathfrak{z} . i

Mft. for a dose : Sig: One twice a day

If angina be not associated with arterio-sclerosis, the following is recommended.

R

Tinct. Aconite	m. ii
Aq. Aurantii. Floris.	ad. \mathfrak{z} . i

Mft. for a dose : Sig: one twice a day with a tabloid of arsenious acid gr. $\frac{1}{100}$.

Guthrie Rankin (*The clinical Journal* Nov. 6, 1907) prescribes :—

R

Zinc. valerianate	gr. iii
Ichthyol	gr. iii
Aisenious acid	gr. 1/40
Ext. cannabis Indica	gr. 1/4

Mft. for a capsule: Sig : to be taken thrice a day.

Finally, the wise words of Sir Douglas Powell may be quoted as a counsel of perfection :—

"He who would treat angina pectoris in its multiform degrees with all the success that can be looked for must take the cases in hand on broad lines in accordance with the well-defined principles of medicine, pursuing such lines into such details as may be appropriated to each case."

Dietetic treatment

The regulation of diet, in regard to both variety and quantity so that the circulation never be overloaded with food or waste material, is of the greatest importance. Prof. Osler rightly remarks that diet in many cases is the central point in treatment. Milk and its products are recommended by the writer.

Burney Yeo recommends a wine glass of cream mixed with the same quantity of hot water and a teaspoonful of spt. ammon. aromatic to be an excellent food on getting up in the morning. Sufficient quantity of pure water is to be consumed for eliminative as well as assimilative purposes.

Half boiled eggs, fresh vegetables, fishes and games are allowed, while all rich dishes, fermented drinks, tea, coffee, alcohol and tobacco smoking are forbidden.

Hygienic treatment.

Avoidance of mental and physical strain and the regulation of exercise in accordance with the capabilities of each individual case must be carefully observed. Gentle walking in the open air is the best form of exercise.

PERICARDITIS.

Pericarditis means inflammation of the pericardial sac, *clinically* as well as *Anatomically* the disease may be considered under the following divisions:—

- i Acute. { 1. Dry pericarditis.
 { 2. Moist pericarditis *i.e.* pericarditis
 { with effusion.

II Chronic adhesive pericarditis :

In the treatment of pericarditis the physician should bear in mind three points.

1. The relief of pain and restlessness.
2. The calming of the heart's action.
3. The arrest or control of the inflammatory process.

Treatment of dry pericarditis —

Internally :—

1. A concentrated dose of magnesium sulph at the very onset of the disease is generally prescribed. The great danger in cases of acute pericarditis is the failure of the action of heart, consequently antimony, aconite general venesection and other remedies which produce depression, are contra-indicated, though prof. Balfour recommended chloral with digitalis.

Internal stimulants *e.g.* ammonia, alcohol. Caffeine, strychnine and strophanthus, are recommended.

During the acute stage digitalis is contraindicated, because it causes too great a strain on the injured heart by increasing the blood pressure through contraction of the arteriols. (*A system of medicine by Osler and Mc. cræ p. 63.*)

2. Treat the cause of pericarditis *e.g.*,

(a) In rheumatism Sodium salicylas with alkalies is recommended.

N B —Salicylates have little controlling action over the effusion

- (b) In renal disease diuretics and hot air bath are good.
 Diuretin is an excellent cardiac stimulant.
 Dose 15 grs. three times a day
 Theocin is a better diuretic.
 Dose 3 to 8 grs. thrice a day.
- (c) In pyæmia, large doses of quinine in effervescent form is urgently required.

(d) If pericarditis develop in the course of a septic disease e.g. puerperal fever, pyæmia, ulcerative endocarditis, diphtheria etc. injection of antistreptococces or antidiphtheretic serum may be advisable—Byrom Bramwell · *Clinical Studies* vol. I page 813.

Nature may safely be allowed to take her course, so far as the pericardial inflammation itself is concerned. Too active drug treatment may do more harm than good.

Locally : —

1. If the distress is great 4 or 5 leeches over the præcordium affords ready relief.
2. If there is cyanosis, orthopnœa and pulse irregular Prof Savil in *the system of clinical Medicine*. recommends bleeding (4 to 8 oss), while Prof: B Bramwell condemns venesection :
3. Blister. There is a difference of opinions regarding blisters among the authorities. Prof. B. Bramwell in the *clinical Studies* vol. I. remarks :—

“To arrest the pericardial inflammation a blister, leeches or dry cups may be applied over the præcordial region,” but prof: Osler in the *principles and practice of Medicine* recommends :—

“Blisters are not indicated in the early stage”

N. B.—In pericarditis arising in the course of Bright's disease, a 'fly blister' should not be applied, but in septic cases (*Pyæmia. Septicæmia, diphtheria etc*) the application of a blister is not likely to be attended with much benefit.

4. Dr: Lees remarks :—“Ice bag is of great value.”

The application of cold over the precordial area by means of compresses or ice bags has become increasingly general in recent years. It usually relieves pain and steadies the action of the heart. The effect of cold is probably to stimulate reflexly the vasomotor nerves of the pericardium, causing contraction of the vessels and lessening of the blood supply.

(*A system of Medicine by Osler and Mc. Crae Vol. iv page 62.*)

5. Poultices, fomentation or spongiopiline.

N. B.—It seems like a paradox that two diametrically opposite things as heat and cold should be employed for the same purpose. The action of heat and cold when applied directly to the blood vessels themselves, in the form of hot or coldwater, is the same. They both produce contraction of the vessels but the contraction produced by heat is the more energetic and lasting.

6. Belladonna poroplaster :

“There is no harm in judiciously applying anodynes such as belladonna etc., over the precordial region ; but I doubt whether they are really beneficial.”—F. T. Roberts *Allbutt's system of Medicine Vol. v. page 774.*

Treatment of pericarditis with effusion —

Promote the absorption of inflammatory products.

- (i) By local stimulation (*the application of blisters, Iodide etc*)
- (ii) By raising the tone of the general health *e. g.* quinine, iron, nux-vomica.
- (iii) By administration of remedies
 - (a) Purgative.
 - (b) Diuretics
 - (c) Other remedies which promote absorption *e. g.* Pot. Iodide, mercury.

(iv) By drawing off a small quantity of fluid by aspiration. Dr : West (*The Lancet of February 26, 1910*) asserts that paracentesis is rarely necessary, for serous effusions in the course of rheumatic fever usually disappear spontaneously, and often produce no urgent symptoms. Even a large effusion

disappears spontaneously, and recovery is complete, so that there are no signs even of adhesions of the pericardium

N.B.—Prof. Sibson remarks — ‘It is in rheumatic pericarditis effusion usually occurs’ while Dr J Broadbent affirms — ‘It is the exception rather than the rule to find effusion in cases of pericarditis of rheumatic origin

Internally. —

Writer's favourite formula :—

Locally :—

R

Pot. acetas	gr. xv
Pot. Iodide	gr. ʒ
Inf. Digitalis	ʒ i
Inf. Scoparia	ad. ʒ i

Mft. for a dose : Sig. one every 4 hours with a tabloid of strychnine sulph gr. 1 60 if the pulse is weak.

Locally. —

1. Small blisters a little outside the pericardial region.
2. Lint. Iodine painting
3. Inunction of Hydrarg oleatis

Treat the patient symptomatically.

1. If pain be severe, opium in the shape of Dover's Powder or morphia hypodermically.
2. If pulse be quick, weak irregular and dicrotic, use digitalis and strophanthus :
3. Sleeplessness : prescribe sulphonal or trional :
4. Cardiac failure :

R

Camphor	gr. ii
Oleum olivæ	m. xx

To be used hypodermically.

Hygienic treatment .

Absolute rest in bed mentally and physically in a well ventilated room kept at an equal temperature, is indispensable.

Dietetic treatment.

If *the effusion is increasing* the amount of fluid which the patient is allowed to drink should be restricted.

Dry salt-free diet is recommended.

In rheumatic cases and in cases developed in the course of Bright's disease the diet should essentially consist of milk and milk food. In cases arising in the course of Pyæmia, Septicæmia, acute Crupous Pneumonia etc., soups and meat extracts may also be given.

ENDOCARDITIS.

Endocarditis means acute inflammation of the endocardium, the lining membrane of the heart. *Clinically* we divide the disease unto two divisions :—Simple or benign, and malignant. *Pathologically* there are two varieties of endocarditis :—Acute and chronic.

Acute endocarditis consists of a redness and roughness of the endocardium particularly over the valves which are constantly rubbing against each other ; “vegetation” gradually appears which may to some extent subside, but once formed never entirely disappears ; the resulting chronic thickening and puckering constitute Chronic endocarditis.

Classical symptoms are —

1. High fever occurs at irregular intervals ; it comes with rigor , repeated rigors are characteristic.
2. Petichial rashes are very common.
3. Sweating may be profuse.
4. Jaundice may be present in some cases.
5. No murmur present.

Prophylactic treatment :—

Acute endocarditis is frequently associated with acute rheumatism ; hence the rational prophylaxis is,

- i) To wear flannel next to the skin to avoid draft
- (ii) To avoid living in damp houses
- (iii) To avoid as much as possible sudden changes of temperature which are apt to produce chill.

Medical treatment :—

Treatment is like that of pericarditis. The objects of the treatment are :—

1. To determine the cause of inflammation, and to administer appropriate serum (*e g. antistreptococcus serum in septic endocarditis, and antidiphtheretic serum in diphtheria*) in malignant endocarditis.

N. B.—Cases of recovery have been reported by injection of anti-streptococcus serum in malignant endocarditis *Lancet Aug 20th 1898.*

Asperin or salicylates with alkalies in acute rheumatism is very good.

Sansom recommends sulpho carbolates.

Savil remarks—"Aconite is of great value to slow and steady the heart

Kleber recommends Benzoate of soda.

Sir. Douglas Powell has tried nuclein.

2. To place the inflamed valve at rest and to remove all sources of mechanical irritation.

3. To promote absorption of the inflammatory products and thereby to prevent the formation of chronic inflammatory and sclerotic changes.

Natural process of healing and rest are it is needless to say, far more effective than medicine.

However there are two kinds of treatment :—

Internal and External :—

Internally :—

Rx

Pot. Iodide	gr. iv
Inf. Digitalis	ʒ. i
Dec. Scoparia.	ad. ʒ. i

Mft. for a dose. Sig: one thrice a day.

Locally :—

- (a) Dr. Caton recommends repeated small blisters over pericardial region.
- (b) Leeches are useful in which there is pain or præcordial distress.
- (c) German physicians recommend ice bag.
- (d) The writer recommends Hydrarg oleatis 10 per cent. to be mixed equally with "fullol oil" and to be rubbed over cardiac area.

4. To relieve symptoms :—

- (a) Dyspnœa and cyanosis—oxygen inhalation.
- (b) Cardiac embarrassment—digitalis and strychnine.
- (c) Pain—morphia :

Treatment of ulcerative endocarditis :—

Hypodermically :—

20c.c. of antistreptococcus serum are to be injected ; inject daily 10c.c. till temperature falls down to normal.

Internally :—

R

Sodii sulpho carbolas	gr. ii
Quinine carbolas	gr. i
Syr : glucose.	qs.

Mft. for a pill. one every 6 hours to be taken with half a drachm of syr. ferri perchloride (*P. D. & Co.*)

Alcohol is allowed to a moderate extent. After a few days it is better to follow the advice of B. Bramwell : *i.e.*, a mixture containing digitalis squill and ammon carb.

Locally :—

Silver preparations are lauded to be very beneficial.

- (a) Inunction of 20 per cent. protargol ointment to be rubbed daily—*Lancet April 26, 1902.*
- (b) Crede's argentum colloid (*collargol*) is used with favourable result both externally and internally.—*Med : Press. May 14, 1904.*

During Convalescence iron arsenic, quinine and nuxvomica are valuable remedies. The writer recommends the following prescription.

R

Sodii arsenias	gr. i '24
Ferratin	gr. ii
Quinine Carbolas	gr. i
Ext. Nucis-vomica	gr. ½
Syr. Glucose.	qs.

Mft. for a pill : Sig : one twice a day after meal.

Hygienic treatment :—

Rest in bed for some weeks at least after convalescence is recommended.

We know that a debilitated heart is usually an irritable heart ; hence perfect rest is of paramount importance.

Dietetic treatment .—

Diet should be light, easily assimilated but nutritive.

MITRAL REGURGITATION.

By mitral insufficiency we mean a backward flow of a portion of blood from the left ventricle into the left auricle due to diseased condition of mitral valve.

The cardinal signs are :—

1. Systolic murmur at the apex which is conducted to the axilla.
2. Accentuation of the pulmonary second sound.
3. Enlargement of heart transversely due to hypertrophy of both ventricles.
4. Pulse :—

(a) During compensation—pulse is full, regular and often of low tension.

(b) During failure of compensation—pulse is irregular.

The disease is to be encountered from two points viz :—

- i. When compensation is well-balanced.
- ii. When compensation is disturbed or broken.

i. When compensation is well-balanced :—

As a rule medical assistance is not called for. In long-standing cases :—

1. Fingers may be clubbed.
2. There is shortness of breath on exertion.
3. Attacks of bronchitis or hæmoptysis on account of the congested condition of the lungs.
4. Congested appearance of the face ; the lips have a bluish tint.

ii. When compensation is disturbed or broken :—

The typical symptoms are :—

1. Venous engorgement :—

- (a) Pulmonary venous stasis ; hence the result is cough often with bloody or watery expectoration.
- (b) Painless enlargement of liver due to portal congestion
- (c) Gastric catarrh.
- (d) Dropsical effusion usually begins in the feet and extends gradually to the body and the serous sacs.
- (e) Urine is usually scanty and albuminous.

2. Palpitation.

3. Dyspnœa is a special feature.

4. Prof: Osler describes a distressing symptom called cardiac "Sleep-start" in which just as the patient falls asleep, he wakes gasping and feeling as if the heart was stopping.

Stage of compensation :—

Medical treatment at this period is not necessary and is often attended with danger. It is better to tell the patient frankly about his condition so that he may take preventive measures. The patient is the best physician of his own self.

The following prophylactic treatments are recommended :—

1. Avoid hurry at meals and worry of life
Patient should live a quiet regulated ordinary life free from excitement.
2. Diet should be wholesome.
3. Tea, coffee, tobacco and other stimulants are not allowed.
4. Walking exercise is the best form of exercise.
5. Stop ascending hills.
6. Bathe daily with cold water to keep up the action of the skin.

Prof: Lauder Brunton in the treatise entitled *the action of medicine* page 355 recommends the following :—

1. Massage and rest.
2. Schott's treatment (Resistance exercise)

This is the method of training by gradual exercise, not against definite resistance, but against weight viz by lifting the body *i.e.*, the patient walks up an incline which the first day is very very gentle, next day steeper, next day steeper again and so on until he is able to walk without difficulty up pretty steep inclines.

3. Oertel's methods.

It is practically schott's treatment, but along with this Oertel generally combines the direction to abstain as far as possible from liquids and to take dry food.

It tends to prevent accumulation of flatus in the intestine and in the stomach—an accumulation which so hampers the action of the heart. According to Broadbent, an abstention from fluid diminishes the volume of blood in circulation, by restricting the amount of water consumed.

Other treatments :—

4. Nauheim saline bath treatment.

It is essentially a very strong solution of common salt with a great deal of carbonic acid gas.

Ordinarily the effervescence of the baths is made by putting bicarbonate of soda in the water, a handful of Tidman's sea salt or Rock salt, and a little hydrochloric acid.

Saline baths act through nervous system, and restore relaxed tone of the circulation.

One of the cardinal principles of the Nauheim treatment is that the patient must not hold the breath or alter the respiration.

Seven minutes is quite suffice to remain in the bath: the patient is then rubbed *dry* with *warm* towels and should rest for a while after the bath.

Effects of bath :—

- (a) A feeling of tightness across the chest.
- (b) A sensation that gives place to a tingling feeling in the lungs.
- (c) A feeling of exhaustion.

5. An excellent account of exercises is published in Dr. T. D. Luke's work " " *Manual of Natural Therapy* " the extract of which is given below :—

Schott-Nauhiem treatment,

Technique—The body should be held upright and joints kept straight. The resistance applied should be sufficient not to cause any shortness of breath or tremor in the patient's limbs.

The resistance may be applied by the patient himself putting into action the opposing muscles to those which effect the movement, or by an attendant, commonly called "the operator." Each movement should be performed slowly and evenly, at a uniform rate, and not repeated twice in the same limb or group of muscles. The patient's breathing should not be accelerated, and any duskiness or pallor of the cheeks, yawning, dilatation of the alæ nasi. or drawing in of the corners of the mouth, must be taken as a signal for the immediate suspension of the movements. In order to prevent the patient closing the glottis and holding his breath, he should be told to keep counting in a whisper.

The Exercises.

1. The arms are to be raised slowly upwards from the side until they are on a level with the shoulder. After a pause they should be slowly lowered.
2. The body should be inclined sideways as much as possible towards the right, and then to the left.
3. One leg should be extended as far as possible sideways from the body, the patient steadying himself by holding on to a chair. The leg is then dropped back. The same movement are repeated by the other leg.
4. The arms are raised in front of the body to a level with the shoulder, and then put down.
5. The hands are rested on the hips, and the body is bent forwards as far as possible, and then raised to the upright position.
6. One leg is raised with the knee straight, forwards as far as possible, then brought back. The movement is repeated with the other leg.
7. With the hands on the hips, the body is twisted round as far as possible to the right, and then again to the left.
8. With the hands resting on a chair, and the back stiff and straight, each leg is raised as far as possible backwards, first one and then the other.
9. The arms are extended and the fists supinated. The arms are then extended outwards, next in-body wards, at the height of the body.
10. Each knee is first raised as far as possible to the and then the leg extended.
11. This movement is the same as No. 9 but with the fists pronated.
12. Each leg is bent backwards from the knee, and then straightened.

13. Each arm is bent and straightened from the elbow
14. The arms are brought from the sides forwards and upwards, then downwards and back as far as they will go, the elbows and the hands being straight.
15. The arms are put at a level with the shoulder, and then bent from the elbows inwards and again extended.
16. With the arms in front at the level of the shoulder, and the hands stretched, the arms are opened out sideways and then brought together.
17. The arms are bent from the elbow outwards and extended.

The advantages are that the muscle cells of the cardio-vascular system, particularly, of the blood vessels are influenced and the tonicity of the blood vessels is corrected by the effect of the tone-manipulating action of the Schott-Nauheim movements.

Stage of broken compensation.

Prof: Osler recommends the following measures to be carried out :—

1. Absolute rest in bed, a few doses of the compound tinc: Cardamon and a saline purge suffice, within a week or ten days to restore the compensation.
2. The relief of the embarrassed circulation by :
 - (a) Venesection.
It may be practised in cases of venous engorgement with dilatation.
 - (b) Depletion through the bowels *e.g.* mag. sulph in concentrated, doses or sodii sulph and sodii phosph of each one drachm, to be taken daily in the morning on an empty stomach.
 - (c) Use of remedies which stimulate the heart's action. The best drug is Digitalis. It acts upon the heart, slowing and at the same time increa-

sing the force of the pulsations ; it acts on the peripheral arteries, raising their tension, so that a steady and equable flow of blood is maintained in the capillaries, which after all, is the prime aim and object of the circulation.

N. R.—Digitalis should not be given if there be signs of dilatation and the pulse be slow.

In the common triple combination characteristic of insufficiency,—dyspnœa, venous stasis, and dropsy—experience has fully borne out the ninth inference of Withering, “that digitalis has a power over the motion of the heart to a degree yet unobserved in any other medicine.”

(*A system of Medicine by Osler and Mc. Crae Vol. iv, page 266*).

In mitral regurgitation when right cavities of heart are much dilated—Digitalis and other cardiac tonics are useless.

One or two leeches over the precordium, repeated every 3 days are of great value.

The result is that the nutrition of the whole heart suffers and the pulmonary congestion is further increased.

“So a vicious circle is established which, if not broken, quickly leads to a fatal issue.”—*West: Diseases of the organs of Respiration (1909) Vol. i, page 238*.

Reciprocal relation involving both the lungs and the other viscera is met with in the later stages of chronic valvular affections.

Gibson (*Text book of Medicine Vol. ii, page 127*) describes them as follows:—

“Sooner or later, according to its form and severity, chronic valvular disease with compensation, itself disposes to failure by establishing a vicious circle of slow progressive impairment of the viscera and their great vital functions—the lungs, liver, stomach, bowels, kidneys, indeed the myocardium itself”

Apocyanum is used in the shape of ext. apocyanum liq dose being five to ten drops in cardiac dropsy.

N. B —Physician should not confuse cardiac stimulant with cardiac tonic one gives a whip while the other gives tone to the organ. Ammonia ether and alcohol are stimulants while strychnine, arsenic, quinine, fresh air etc are cardiac tonics

Treat the patient symptomatically :—

1. Dropsy.

Hydragogue cathartic with Inf: Digitalis and flannel bandage on œdematous legs are recommended. Diuretin gr. xv in catchet twice a day is efficacious.

The following well-known combinations are worthy of a trial :—

(a) R.

Pulv. Squill	
—Digitalis	
Caffinæ citras	aa gr. xxx
Hydrarg: Subchloride	gr.v

Divide it into 30 pulvs: Sig. one thrice a day.

(b) R.

Pulv: Scillæ	
— Digitalis	
Pil: Hydrarg	aa gr.xii

Divide it into 20 pills; Sig one three times a day.

(c) R.

Diuretin	gr.x
Urotropine	gr vii
Inf: Digitalis	3 i
Inf: Bachu	ad 3 i

Mft: for a dose: Sig: one twice a day.

It is useful in Uric acid diathesis, gouty and rheumatic condition, and suppurations of the urinary tract.

2. Dyspnœa.—

Morphia is invaluable.

In dyspnœa with dropsy nitroglycerine is of great value; inhalation of oxygen is recommended.

3. Palpitation and other cardiac distress with dilatation.
Iodides and nitroglycerine are to be used alternately.

The writer recommends the following nitroglycerine mixture.

R.

Liq : Trinitrine	m i
Tinc. Nucis Vomica	m. v
Tinc : Cardamon Co.	m. xx
Inf: Digitalis	℥. i
Aq: Chloroformi	ad. ℥. i

Mft. for a dose : Sig. one every six hours.

4. Gastric Symptoms :—

(a) *Vomiting* :—Small bits of ice to suck.

Milk and limewater.

Milk and Sodii Citras.

Caffinæ citras effervescence and Cærium
oxalus effervescence together.

(b) *Dyspepsia etc.*—Taka diastas and papain.

5. When Compensation fails.

(a) *Dropsy with œdema of lungs.*

Writer's favourite formula :—

R.

Sodii Benzoas	gr. x
— Phosph	℥. i
Caffinæ Citras	gr. ii
Inf: Digitalis	℥. i
Liq : Euonymin et pepsin Co.	℥ i
Dec : Scoparia	ad. ℥ i

Mft. for a dose : Sig. one thrice a day.

(b) *Dropsy with œdema of lungs, enlarged liver, gastric disturbance etc.*

The writer recommends the following :—

R.

Pot Iodide	gr. ii
Ammon Chloride	gr. x
Mag. Sulph	℥. i
Inf. Digitalis	℥. i
Liq. Iridin et papain Co.	℥. i
Inf. Senega	ad. ℥. i

Mft. for a dose : Sig. one thrice a day.

6. Hæmoptysis :

The patient is invariably better after an attack, as it relieves venous congestion ; it is rarely fatal.

7. Sleeplessness.

A dose of Spt. Chloroform and Spt. Camphor in little hot whisky is recommended by Dr. Sansom. Morphia, Sulphonal, Chloralamid and Bromural are excellent hypnotics.

8. Arterio-sclerosis with dilated heart.

The writer recommends the following :—

(a) R

Ferri Iodide	gr. $\frac{1}{2}$
Arsenic Iodide	gr. $\frac{1}{24}$
Ext. Strophanthus	gr. $\frac{1}{4}$
Ext. Nucis vomica	gr. $\frac{1}{4}$

Mft. for a pill. Sig : one thrice a day.

(b) R

Sodii Iodide	gr. v
Liq : Sodii arsenias	m. iii
Spt. ammon aromatic	m. xv
Tinc : Convalaria mag.	m. v
AQ : Chloroformi	ad. \mathfrak{z} . i

Mft. for a dose : Sig : one thrice a day after meal.

9. Renal symptoms.

A brisk purge at the onset followed by digitalis or strophanthus :

10. Precordial Pain—Poultice.**Dietetic Treatment :—**

Starchy food and all articles likely to cause flatulency are forbidden : stimulants *e.g.* whisky or brandy is usually unnecessary. The amount of fluid should be restricted. Milk, eggs, fowl and fishes are allowed.

MITRAL STENOSIS.

Narrowing of the mitral orifice is usually the result of valvular endocarditis ; it occurs in the earlier years of life. There are two varieties of stenosis viz :—

(1) Corrigan's button hole contraction.

(2) Funnel-shaped.

For clinical purposes we divide the disease into two stages : —

- i. When compensation is well balanced.
 1. Epistaxis may follow.
 2. Irregular attack of dyspnœa is very frequent.
- ii. When compensation fails.
 1. Presystolic *bruit* may be inaudible.
 2. Inaudibility of second sound at apex.
 3. Rapid and irregular action of the heart.
 4. Venous stasis (*Vide the symptoms of mitral insufficiency.*)
 5. In mitral stenosis dropsy appears later while in mitral regurgitation it appears early.

N.B.—In mitral stenosis a faint or absent second sound is a grave sign.

The classical symptoms are :

1. Pulse :—

When compensation is well-balanced—it is slow but regular.

When compensation is disturbed—it becomes very irregular.

2. Pulsation of jugular vein.
3. Epigastric pulsation.
4. A visible thrill.
6. Localised pre-systolic *bruit* : it ends with a peculiar sudden snap.

First sound at apex is accentuated.

6. Reduplicated second sound at the apex called "Post man's knock"

7. Accentuation of second pulmonary sound.

Medical treatment of Mitral Stenosis :—

Sir B. Richardson prescribes ammonia with the object of

- (1) Increasing fluidity of blood.
- (2) Dissolving coagula already formed.
- (3) Stimulating the nervous mechanism of heart and lungs.
- (4) Increasing the bronchial secretion hence it is used in embolism of pulmonary artery.

The author recommends the following prescription :—

R

Liq : ammon fort	m. i—v
Ext : Glycyrrhizæ liq.	m x
Aq :	ad. ʒ. i

Mft for a dose : Sig. every hour till symptoms are relieved.

Sir Willium Broadbents recommends :—

1. Mercurial purge.
2. Rest.
3. Strychnine, iron, nitro-glycerine or nitrite, quinine and stimulants.

N.B.—Digitalis should not be given unless there are symptoms of right ventricle failure, and not then until after free purgation

On no account should it be given for a long period.

Mitral stenosis associated with nervous disorders *e.g.* hemiplegia especially of the right side, hemichoria etc. due to infactions of the branches of the intracranial arteries, absolute rest and ammonia treatment are best.

Mitral stenosis with disorders of nutrition :—

The normal arterial blood supply has been gradually deminished by the contraction of the mitral orifice, and has continued to be in minimum quantity during the periods of development and growth.

Sir Samuel Wilks has rightly remarked :—

“The organism is working with a diminished amount of blood.”

408 DISEASES OF THE CIRCULATORY SYSTEM.

Friction, massage, muscular movement, baths, suitable climates and regulation of diet are but means to an end.

Mitral stenosis with arterial sclerosis :—

The following combination acts admirably well.

R

Pot : Iodide	gr. ii
Liq. Arsenicalis	m. ii
Tin : Actæ Recemosa	m. v
Aq : Chloroformi	ad. ʒ. i

Mft. for dose : Sig : one thrice a day.

Mitral stenosis associated with Chronic renal disease and arterio-sclerosis :—

Milk 3-6 pints a day ; may add isingglass, gelatin, light biscuits and Sodii citras.

Sir W. Broadbent remarks :—

“Nitroglycerine and other vaso-dilators may be given in conjunction with general tonics such as iron quinine and nuxvomica.”

When compensation is re-established :—

Iron arsenic strychnine and Codliver oil are recommended.

Dietetic treatment :—

To this effect Sir. Andrew Clerk remarks :—

1. Diet should be dry.
2. Daily dietary fluid to be restricted.
3. No Alcohol.

AORTIC REGURGITATION.

By aortic regurgitation we mean that in diastole some of the blood driven into the aorta returns to the left ventricle.

The classical signs and symptoms are :—

1. Apex beat on the anterior axillary line, the impulse is usually strong and heaving.
2. A diastolic murmur in the second right interspace (*aortic area*) which is propagated towards the ensiform cartilage.

3. A systolic murmur at the aortic region which is propagated upward into the neck. It is produced by roughening of the segments or of intima of the arch and is not due to stenosis as is commonly supposed.
4. A presystolic murmur at the apex called Flint murmur.
5. Visible pulsation of peripheral vessels *e.g.* temporal arteries etc.
6. Capillary pulsation best seen in the finger-nails or by drawing a line upon the forehead, when the margin of hyperæmia on either side alternately blushes and pales.
7. Water-hammer or corrigan pulse *i.e.* pulse wave strikes the finger forcibly with the quick jerking impulse and immediately recedes or collapses.
8. Duroziez's sign *i.e.* pressure of stethoscope on femoral artery elicits a double murmur.

N.B.—Loudness of murmur is no indication of the severity of lesion, the reverse is the case. If a murmur previously loud falls in intensity it is a bad omen.

The main causes are :—

1. Infectious disease *e.g.* rheumatism, syphilis.
2. Mechanical strain.
 - (a) Sudden muscular stress especially in cases of arterial degeneration. It may be acute or chronic.
 - (b) External violence *e.g.* a blow or kick over the cardiac area ; a small deposit of fibrine begins to form on the raw edge.
 - (c) Emotion may accelerate the work of cardiac machinery : blood pressure may perhaps be dangerously raised.
 - (d) Nervous shock.

Prof : T. Clifford Allbutt on the other hand remarks :—

“Nervous shock tends to lower the blood pressure.”

3. Atheroma.

Dr. Parkes Weber finds that syphilis is apt to be the starting point of atheroma.

To quote Dr. Balfour "There is a consensus of opinion that the arterial system is that upon which the finger of decay is first laid."

Atheroma as a general disease of the arterial tree is not due, in the main, to muscular stress, but local atheroma very often has this origin.

N. B.—Acquired aortic disease in children is one of the rarest of clinical cases.

For clinical purposes we divide it under two groups:—

1. When compensation is well balanced,
2. When compensation fails,
1. When compensation is well balanced,

Headache, dizziness, flashes of light, and a feeling of faintness on rising quickly are the early symptoms. Pain is a marked and troublesome feature ; attacks of angina pectoris are more frequent in this than in any other valvular disease.

2. When compensation fails.

1. Shortness of breath, dyspnœa.
2. General dropsy is not common ; œdema of feet is due to anæmia, venous stasis etc.
3. Cough due to congestion of lungs.
4. Hæmoptysis is less frequent than in mitral disease.
5. Irregular fever due to recurring endocarditis.
6. Pain over enlarged spleen due to embolism.
7. Sudden death is frequent.

The treatment of aortic insufficiency falls into the natural divisions viz :—

1. Dietetic.
2. Exercise,
3. Medicinal.

1. Dietetic treatment :—

The physician has to bear in mind 3 points viz :—

- (a) To the sympathy between the heart and the stomach.
- (b) To good nutrition of the heart.
- (c) To moderation of its work.

Avoid such diets which promote arterial resistance.

Avoid such diet which creates indigestion *e.g.* too much carbohydrates,

Avoid such diet which favours goutiness *e.g.* much meat etc.

Avoid alcohol as an ordinary article of diet but it may be used as medicine ; hence mixed diet would be the standard diet, but the patient would stamp in his mind two cardinal points viz :—

- i. Restriction of liquids during meals.
- ii. Thorough mastication of food whether it be soft or hard.

We must trim our treatment according to the phases and peculiarities of the individual.

Fraentzel well says that to know that one has heart disease may be more mischievous than the disease itself. Let the patient understand that he has a weak heart, that he must rigidly observe the ordinary rules of life, and not to fash himself.

2. Exercise :

Gentle walking is best. So long as he lives, let him live, so far as may be, the life of a good citizen. The physician who inspires moral health into his patient brings comfort also to his body.

3. Medicinal Treatment :—

There are two stages of treatment :—

- i. When compensation fails.
- ii. When compensation is well balanced.

i. When compensation fails :

T. Clifford Allbutt recommends gentle mercurials, gentle salines and a little Pot Iodide which reduces blood pressure.

N.B. —Digitalis is of little use in this disease. Corrigan condemned the use of Digitalis in aortic insufficiency while Balfour was in favour of its use.

Prof : Clifford in *Allbutt's system of Medicine Vol. v. Page 962* remarks —

"No one would give digitalis when a big heart is thundering along its course and the arteries bounding under its pulses" but if the left ventricle be relatively too capacious, and the apex beat becomes diffused, put the patient to rest with his feet up, so as to diminish blood-pressure ; and put him on tender meats avoiding much carbohydrates and much liquid. Gentle deobstruents will probably be required also. Now if under these means the signs and symptoms of dilatation continue, administer one dose of digitalis. Never give digitalis if the pulse be at or below 75.

Sir. Willium Broadbent recommends ammonia ether, belladonna and nucis vomica.

When there is venous obstruction, jugular vein distended and pulsating, liver enlarged and dropsy present the author recommends first purgation, subsequently digitalis.

Writer's method of treatment :—

Early in the morning take a dose of apenta water. A glass of warm water half an hour before meal is recommended, the object being to wash away the contents of stomach and to promote hunger ; it serves also the purpose of internal fomentation and thus checks flatulency.

Iodides to be given well diluted with water or milk after meal.

When compensation is well balanced.

- i. He may take moderate exercise.
- ii. He may live a more bracing moral life.

Strophanthus is useful in young than in old people, Iodides are excellent vaso-dilators; Arsenic and strychnine are useful tonics when potent drugs fail or are inadmissible. Caffeine stimulates the heart when it flags and it produces diuresis.

Leonard Hill says "Morphia is one of the best vaso-constrictors and cardiac tonics we possess."

It is best given hypo-dermically.

Treat the patient symptomatically.

1. Anginal pain.—Use amyl nitras, nitro glycerine.
2. Sleeplessness.—Use chloralamid, sulphonal, trional.
3. Restlessness. - Use ammon bromide, avoid all salts of Potass.
4. Cough. is relieved by hot drinks, codeia.

DISEASES OF ARTERIES.

1. ARTERIO-SCLEROSIS,

2. ANEURISM.

ARTERIO SCLEROSIS.

The term arterio-sclerosis means thickening and hardening of the arterial coats, which lead to loss of elasticity and contractility of the arteries.

Etiology of the disease —

1. Syphilis. It ruins the constitution of myriads and their progeny to run rampant throughout the land.
2. Infectious diseases *e.g.* typhoid fever, acute rheumatism, diphtheria septicæmia, influenza, malaria &c. (*Thayer in the Amer. Jour. of the Medical Science, March 1904.*)

414 DISEASES OF THE CIRCULATORY SYSTEM.

3. Toxin of *Bacillus coli*.

It is a factor in the production of degenerative changes in the blood vessels.

(*Sir James Barr in the British Med. Jour. Jan. 20, 1906*).

4. Lead.

5. Pressor agents *e.g.* caffeine, theobromine, adrenalin, digitalis, purin bodies, &c.

6. Alcohol. Dr. Richard Cabot, of Boston, says that "the alcoholic origin of arterio-sclerosis is a myth." And among French physicians Lancereaux and Duclos entirely exclude it as a cause.

7. Nitrogenous foods.

8. Age. It is usually a disease of late adult life. The trite saying of Cazalis, that "a man is as old as his arteries," has become of a evident axiom.

9. Sex. The disease is much more common in men than in women, because they live more freely, suffer more frequently from syphilis, have more mental worry and anxiety, are more exposed, and are subjected to much greater physical strain,

10. Physical strain. Exercise in moderation increases metabolism and often counteracts the pernicious effects of high living. Life means action ; without activity there might be existence, but nothing worthy of the name of life. Professor Bunge says. "The mystery of life lies hidden in activity."

11. Cold. Long-continued contraction of the superficial vessels and their vasa vasorum leads to degenerative changes.

12. Mental strain. Worry, anxiety &c. are powerful factors in the production of arterio-sclerosis.

Prof. Huchard rightly remarks :—

"Arterio-sclerosis is in many instances the ultimate consequence of chronic alimentary intoxication which can be remedied in part by a meatless diet, and in part by the administration of soured milk, which inhibits irregular fermentation."

Tell your patient frankly that the arterial tree is ossifying slowly, that the time has come when the human engine cannot work at high speed and pressure and that the price of comfort and life can only be purchased by obedience to medical supervision and by careful conscientious living.

Once degeneration, fibrosis and calcification have taken place, the damage is irreparable, and as "all the king's horses and all the king's men could not put Humpty Dumpty up" after his fall, so all treatments cannot restore the normal structure of the arteries.

Prevention is always better than cure.

There are three forms of arterial degeneration viz :—

- (i) Atheroma.
- (ii) Arterio-sclerosis proper.
- (iii) Amyloid or lardaceous change.

The medicine of the future will be largely one of prevention of disease and preservation of health, and even in the present day there are very many individuals willing to pay—and pay well—for the maintenance of their health.

There are already far too many weaklings—mentally and physically—in these degenerate days, when sentiment rather than reason rules the world.

Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay,

Whatsoever thine hand findeth to do, do it with thy might ; for there is no work, nor device, nor knowledge, nor wisdom, in the grave, whither thou goest.

Prof. Thoma divides the cases into *primary arterio-sclerosis* in which there are local changes in the arteries leading to dilatation and compensatory increase of the connective tissue of the intima, and *secondary arterio-sclerosis* due to changes in the arteries which follow increased resistance in the capillary circulation.

According to Prof. Thoma, the first step in the process is the diminution in the contractility of the muscular coat of the arteries as a result of long continued exertion, or of direct action on it of some of the toxic substances.

The affected arteries become dilated and to compensate for this, the inner coat becomes thickened. In consequence of the new formation of the fibrous tissue, the arteries become more rigid and offer great resistance to the blood stream and thus cause rise of blood pressure. Hence the main indications for treatment are :—

- I To lower arterial tension by purgatives and diaphoretics.
- II To avoid any extra strain being thrown upon the heart or vessels.
- III. To prescribe arterial sedatives.

I. The following purgative is recommended :—

R

Mag : Sulph	ʒ. iss
Sodii Sulph	ʒ. iss
Aq. Rosacæ	ʒ. ii
Aq. Chloroformi	ad. ʒ i

Mft. for a dose. Sig. Early in the morning on an empty stomach—

Scheffer in *La clinic March 1909* recommends sodii silicate in arterio-sclerosis, it reduces blood pressure and lessens cerebral symptoms. Bangsalochan' is composed of silicate. According to Scheffer the disease is caused by a disturbance of mineral metabolism.

Barley water and milk are the best diuretics. Vapour bath is the best diaphoretic.

ii. Avoid meat, over-eating, alcoholic drinks, over-work, mental strain, etc. To run to catch a tram or a train should be carefully avoided.

iii. Iodides are the best arterial sedatives

Iodides render the blood more fluid, act favourably upon nervous systems, lower blood pressure, and allow nature to do its work. Iodides should be given for long periods interrupted every few weeks, always after meals, well diluted, best in combination with bicarbonate of soda or potash.

Arterio-sclerosis with kidney complication

Sir James Barr recommends benzoates, uræmic convulsions cease under their free administration. They are said to convert uric acid into the more soluble hippuric acid, and they also eliminate other purin bodies. Like the salicylates, they have a cholagogue action.

Edgecombe (*Proceedings of the Royal society of Medicine, May 1913*) remarks that too prolonged or excessive, use of iodides tends to induce loss of tonicity and to accelerate cardiac defeat.

When the blood pressure is high the use of vaso-dilators nitro-glycerine, sodii nitris are indicated :

When arterial spasm is associated with sclerosis.

Dr. G. A. Gibson, recommends.

R

Sodii Nitris	gr. xii
Sodii Iodide	ʒ. ii
Aq. Menth pip	ad. ʒ. vi

Dose.—A dessertspoonful in water three times a day after meals.

Writer's favourite formula.

R

Sodii Nitris	gr. i
— Hippuras	gr. ii
— Iodide	gr. v
Syr : aromaticus	m. xx
Aq :	ad. ʒ. i

Mft. for a dose : Sig ; one thrice a day.

418 DISEASES OF THE CIRCULATORY SYSTEM.

In some cases combinations of iodides and arsenic are beneficial.

R

Sodii Iodide	
Liq Sodii Arseniatis	aa 3 ii
Aq	ad. 3. ii

Dose.—A teaspoonful in water three times a day after meals.

In persistent high blood pressure with arterial degeneration.

Dr. Lauder Brunton recommends :—

R

Pot. Bicarb	gr xxviii
— Nitrate	gr. xviii
Sodii Nitris	gr. ivss

Mft. Dissolve in a tumblerful of warm water and sip early in the morning.

Gastric symptoms of arterio-sclerosis are :—

Indigestion, pain in the stomach, distension, and belching. The patient emphasises particularly the importance of examining the vascular system thoroughly.

Dr. Akin (*Jour Amer. Med. Association June 5*) recommends the following :—

1. Diuretin : 10-15 grs. thrice a day.
3. Nitrite.
3. Nitroglycerine.
4. Tinc : strophanthus mv-viii, three times a day.
5. Pot or sodium Iodide gr. v. to x.

Antisclerosin is lauded to be highly-beneficial. Dose 2, tablets thrice a day after meal. Iodipin tablets (*Merck*) Dose two tablets three times daily Milk fermented either by fermenlactyl or lactone tablet is very good. For atheroma the best decalcifying agents are lemon, citric acid, ammonium citrate, potassium citrate, sodium citrate, and strontium lactate.

Sir. A. E. Wright has shown that the citrates have a decalcifying effect on the blood, At first they lessen its

coagulability, but, after prolonged use, this again increases, and Dr Wright believes that this is due to the citrates, dissolving the lime salts out of the tissues.

Calcium salts are said to be eliminated by sodii bicarb 3 iss neutralised by lactic acid : add 6 ozs, of water to it. The whole quantity to be taken within 24 hours.

Dr. Marc Finkler advocates the presence of an excess of uric acid in the blood as one of the chief factors of artero-sclerosis. The rational treatment consequently consist in disintoxicating the patient by the use of dissolvents of uric acid. Urodonal is a most powerful dissolvent of the acid, the dose being a teaspoonful in little water four times a day between meals for 10 days every month.

Dr. George Oliver recommends thyroid. It dilates the arteries and increases tissue metabolism.

Avoid meat, highly seasoned dishes, cheese, fish, strong wines, kidney, beans, sweet bread etc

Von Paul Schenk (*Deutsche Med. Zeitung* 1910, No. 4) remarks that abuse of tobacco is the cause of artero-sclerosis.

Drinking of alcohol is one of the potent causes of this disease.

Hygienic Treatment :—

- (a) Hydrotherapy in arterio-sclerosis has its chief action on the regulation of the circulation ; rightly used it may under certain conditions check the progress of the disease and break the vicious circle in which the arterio-sclerotic patient finds himself. After the primary rise of pressure which has been observed by many workers to follow thermic irritation either with hot or cold water, there is a general reaction in which the state of hypertonus is replaced by widening of the vessels and there is an increase of the blood flow to the capillaries ; after further oscillations the condition of the circulation steadies itself, though it may not come back to its original condition, and it is this alteration of condition,

which may perhaps be cumulative if the treatment is often repeated, which is to be looked upon as the therapeutic effect of the treatment. In arteriosclerotic vessels the "reaction" power is not normal, and yet it is only very seldom that the changes in the vessels are so advanced and so widespread that no part of it is capable of reaction.

Hirschfeld remarks :—

"The skin becomes more vascular, relieving the internal organs, lifting the load of the heart, relieving insomnia, increasing metabolism and oxidation, and eliminating waste materials".

The use of cold as a thermic irritant is contra-indicated :—

1. In advanced sclerosis of the splanchnic vessels.
2. Insufficiency of the heart muscle.

N.B.—Worry of daily life often causes a much more rise of blood pressure than does the use of cold.

Hot baths should not be given to sclerotics at a higher temperature than 37° to 38° C., but hot air or light baths are free from danger and of advantage. The duration of bath ranges from 10 to 15 minutes.

The use of heat is contraindicated :—

1. Interstitial nephritis.
2. Sclerosis of the vessels of the brain.
3. Advanced insufficiency of the myocardium.

N.B.—Co₂ bath is recommended by Strasser.

(b) **Massage is useful**, and it is an erroneous idea that massage of muscles or abdominal massage strongly and lastingly heightens the blood pressure.

Massage and vibration have the distinct advantage of dilating the peripheral blood vessels, lowering blood-pressure favouring tissue metamorphosis, destruction of toxins and renal elimination.

It should be applied especially to the spinal region, for 2' or 3" inches on either side of the spinal column, and should be heavy enough to convey deep percussion to the tissues below.

Abdominal kneading decidedly reduces blood pressure.

- (c) **Light bath** :—relaxes the peripheral capillaries, promotes perspiration and in this way force elimination from all the emunctories by lowering blood pressure lifting the load from the heart and kidney, displacing the blood from the interior to the skin surface.
- (d) **Climate** :—A dry inland climate of moderate elevation that is bright, sunny and general in winter, is decidedly the best.
- (e) **Exercise** :—Walking and moderate exercise to the point of fatigue in the fresh air is best.
- (f) **Electricity** :—Galvanic, faradic and sinusoidal currents possess no value in this disease. High frequency current of auto-condensation and auto-conduction and the static wave-current are recommended by Pope in the *Monthly cyclopædia and medical Bulletin*.
- (g) **Mental and nervous excitement** —Especially emotional disturbances, react on the heart and blood-vessels causing vascular tension, and for that reason strong repeated emotions may increase the lesions.
- (h) **Dress warmly** :—At all seasons of the year, for a warm skin means that there is more blood in it than when cold.

Dietetic treatment :—

Diet is most important. The keynote is to maintain general nutrition.

Physiological economy in nutrition means temperance, and not prohibition. It means full freedom of choice in the selection of food. It is not cereal diet nor vegetarianism, but it is the judicious application of scientific truth to the art of living, in which man is called upon to apply to himself

that same care and judgement in the protection of his bodily machinery that he applies to the mechanical products of his skill and creative power

"Cut out" at once, all alcohol, tobacco, coffee and probably tea. Reduce meats to a minimum, and where these are allowed, give preference to eggs, fish and fowl, Never eat until hungry; then eat a small meal slowly, masticating carefully, consuming no fluid thus preventing, as much as possible, hyperæmia of the splanchnic vessels with increased action of the heart, obesity etc.

The writer recommends the following :—

1. Purin free diet (*vide my article on Gout*) milk, fresh and stewed fruits, practically all vegetables, cereals, a moderate amount of fats and breads both stale and dry are recommended.
2. Limiting the amount of water.
3. Fermented milk is an excellent preventive of arteriosclerosis.

American writers attempt to dissolve the lime salts with lactic acid preparations.

ANEURISM.

A circumscribed or diffuse semi-solid tumor formed in connection with an artery in any part of the body either by more or less uniform localised dilatation of any or all of the coats without a break in the continuity in the walls or in connection with a minute rupture of the thinned walls of the sac formed by the stretched coats of the artery.

Varieties of Aneurism :—

1. A general dilatation involving the whole circumference of the vessel and it may be cylindrical, fusiform or globular.
2. Sacculated aneurism : This is the most important variety, there is a lateral bulging of a part of the circumference of an artery.

It is subdivided into :—

- (a) True aneurism (when the arterial coats are entire,
 - (b) False „ (when more or less of inner and middle coats are destroyed.)
 - (c) Diffuse „ (when all the coats have given way and the sac is formed by the other tissue.)
3. Dissecting aneurism—blood finds its way between the coats of an artery

Rare forms

- 4 Embolic—sharp cornered segment from valves cuts through the wall of small vessels partially causing the disease.
- 5. Mycotic—Confined to malignant endocarditis. Bacteria set up suppurative inflammation
- 6. Parasitic.

A B—The part of Aortic arch which is most commonly affected is the ascending portion especially on its convex sides on which most strains fall.

Treatment of aneurism —

The treatment is purely palliative. Men with aneurism of the aorta according to the version of late Hilton Fagge generally “die in harness.”

The physician should bear in mind.

- 1. To promote clotting and consolidation within the sac.
- 2. To avoid strain both physical and mental *e.g.* bowels should be kept regular and mental quiet should be enjoined.
- 3. To be on low diet as it diminishes the blood-volume, renders blood more firmous and thus favours coagulation.
- 4. To enjoy perfect rest. The reduction of daily number of heart beats when the patient is recumbent is the principal advantage.

Prof : Balfour recommends Iodide of potassum ten to fifteen grains three times a day.

424 DISEASES OF THE CIRCULATORY SYSTEM.

It increases the secretion and so inspissates the blood ; it lowers blood-presure and thus causes thickening and contraction of the sac , besides it relieves pain.

Other measures to induce coagulation.

1. Electricity.

2. Insertion of horse-hair, needles or thin silver wire.

Fine silver wire pushed through a hypodermic needle, is probably the most satisfactory method, and may be combined with electrolysis, known as Loreta's method.

3. Injection of perchloride of iron into the sac.

4. Injection of gelatin solution his been recommended by recent physicians.

5. 500c.c of 1 per cent sol. of gelatin to be injected into the thigh.

DISEASES OF THE BLOOD.

ANÆMIA.

Anæmia may be defined as a reduction in the amount of the blood as a whole or of its corpuscles, or of certain of its more important constituents such as albumen and hæmoglobin.

Anæmia may be grouped as —

i. *Secondary.*

ii. *Primary or "idiopathic".*

In the former anæmia has developed with some apparent cause, while in the latter it has developed without any apparent cause.

i. **Secondary anæmia :—**

It is classified under four division :—

1. Anæmia from hæmorrhage either traumatic or spontaneous.

2. Anæmia is produced by long continued drain on the albuminous material of the blood as in chronic suppuration, bright's disease, cancer etc.

3. Anæmia from inanition :—

This is brought about by defective food supply.

4. Toxic anæmia is induced by the action of certain poisons on the blood e. g. lead, mercury, arsenic, syphilis, malaria, etc. Anæmia of pyrexia is due to a toxic action.

ii. **Primary anæmia :—**

There are two divisions viz :—

1. **Chlorosis.**

2. **Pernicious anæmia.**

Chlorosis is an idiopathic anæmia characterised by the diminution of red blood corpuscles, a marked relative diminution of hæmoglobin, and slight increase of leucocytosis.

Pernicious anæmia suggests the well-known blood picture characterised by the diminution of red blood with the retention of a relative high hæmoglobin content, the appearance of

426 DISEASES OF THE CIRCULATORY SYSTEM.

unripe erythrocytes, such as megaloblasts, and megalocytes, normoblasts and normocytes in the circulating blood, and finally a diminution in the number of leucocytes.

The classical symptoms of chlorosis and pernicious anæmia are best compared by a diagram.

Symptoms.	Chlorosis.	Pernicious anaemia.
Age and Sex.	Young female.	Middle aged man.
Colour and skin.	Pale, greenish tint.	Lemon-yellow or primrose colour.
Colour of conjunctivæ.	Anæmic, but of slightly bluish tint.	Anæmic, but of a distinctly yellow tint.
Pigmentation of skin.	Does not occur.	Skin deeply pigmented like Addison's disease.
Nails.	Thin, flat, brittle and cracked.	Not so.
Colour of urine.	Pale.	Dark-co'oured,
Condition of tongue.	Pale, large, flabby, indented with teeth, and often furred.	Clean, unduly smooth and denuded of its epithelium.
Condition of bowels.	Constipation.	Vomiting and diarrhœa.
State of nutrition.	Body is well covered with fat.	Body is well covered with fat.
Hæmorrhages.	No epistaxis, and vomiting of blood.	Epistaxis, bleeding from the gums, petechial hæmorrhage.
Fever.	Absent.	Present.
Heart, venous hum.	Heart muscle is profoundly fatty.	Heart muscle is profoundly fatty.
"Colour-index".	Much below normal.	Considerably above the normal.

Treatment of chlorosis.—

Chlorosis is a special form of anæmia characterised by marked reduction in the proportion of hæmoglobin. In as much as it is almost peculiar to young women in the years following the onset of menstruation, it is held by some observers to have a sexual origin ; but it is hardly necessary to invoke this, seeing that hard work, insufficient fresh air, and inadequate nourishment, when associated with constipation and gastrointestinal fermentation, suffice to explain its occurrence. This etiology is not impugned by the fact that chlorosis is met with in all classes of society, because in the higher classes the nourishment, though abundant, may be unsuitable late hours entail fatigue, and want of ventilation is not peculiar to the dwellings of the poor. These factors alone may not suffice to determine the physical deterioration characteristic of chlorosis, and the prime factor seems to be a state of chronic toxæmia, or copræmia, consequent upon fæcal stasis and the absorption of toxins from the alimentary origin. No doubt there is also an inherited tendency that gives the special pathological stamp, for the tendency to chlorosis is markedly hereditary. Possibly this may be due to a lack of stability of the hæmoglobin compounds.

In discussing the treatment of chlorosis, it is necessary to bear the etiological factors in mind, because diet and medication are apt to prove useless unless the causative factors are remedied.

Physician should bear in mind :—

1. That iron must be supplied to the blood, on account of the deficiency of hæmoglobin.
 2. That until this is effected, it is important that heart which has undergone fatty degeneration, should be protected, so far as possible from strain.
1. **Action of iron on the treatment of anæmia ;—**

Hæmoglobin is, according to Liebig is a crystallizable albumen combination and is an important constituent of the blood.

Hæmoglobin { albuminous body.
 { Hæmatin (ferruginous body) which takes
 { up oxygen and transfer it to the tissue.

Arterial blood is saturated with 9/10ths of **Oxygen** according to Pflüger, and with 14/15ths of **Oxygen** according to Hufner ; Venous blood contains 8 to 15 vol. per cent less. Thus the name of **Oxy-Hæmoglobin** for Hæmoglobin which is saturated with **Oxygen** and **Reduced Haemoglobin** for such as has transferred the **Oxygen**.

According to Landois the strength of the **Oxygen** in the blood is in proportion to the strength of the iron. The strength of iron in the blood (0.55 in 100 parts) is in direct proportion to the strength of **Haemoglobin** which again is in proportion to the strength of **Erythrocytes** on which depends the specific weight of the blood. Further, it was proved that the absorption of **Oxygen** is in direct proportion with the strength of iron in the blood. According to Hoppe-Seyler, one atom of iron in the blood can fix two atoms of **Oxygen**. How and whence the **Haemoglobin** is formed in the animal body is not yet established with certainty. Experience teaches that ferruginous alimentary substances and iron preparation have the property of furthering the formation of **Haemoglobin**.

Muller and Hoffmann have proved that the iron is absorbed by the digestive tract and utilised in the organism, influencing advantageously the functions of the red blood-forming organs.

Ortner writes on iron combinations, especially on Pil. Blaud, in his "*Therapy of Internal Diseases*." "It is possible that their well-known good effects depend upon their containing soda, an important constituent of the red blood corpuscles ; and on the other hand, upon their containing Sulphuric Acid which is able to convert aromatic bodies arising through abnormal intestinal fermentation in Chlorotics into less injurious sulphates or the good effect of the pills may be furthered by the formation of Carbonate of Iron in *statu nascendi*. (Carbonate of Iron in a nascent condition.)

The Bi-Palatinoids (*Oppenheimer Son & Co.*) are small hermetically closed, soluble capsules of glycerine and gelatine divided into two by a partition of the same material. When the capsule is dissolved in the stomach, the substances enclosed in these divisions act chemically on each other in a nascent state. One half contains Ferrous Sulphate, the other half, Sodium Carbonate. When the capsule is dissolved in the stomach the white Ferrum Carbonicum Oxydulatum is formed and absorbed.

The writer recommends some of the organic preparation of Iron viz : —

1. Homell's hæmatogen.
2. Vin de hæmoglobin
3. Iron-somatose.
4. Ferratin
5. Ovo-ferrum.
6. Hæmogallol tablets. (*Merck*)
7. Orrefin Bi-palatinoid : (*Oppenheimer*)
8. Algiron tablets.
9. Herbanin.
10. Pepto-fer (*Jatlet*).
11. Hæmoglobin Syrup (*Dischiens*).

Hæmoglobin is the great oxygen-carrier : when hæmoglobin is deficient, there is a deficient supply of oxygen to the tissues : when a tissue is deprived of oxygen, it becomes fatty. The result is that in chlorosis the tissues become fatty the muscles and especially the heart muscle, undergo fatty degeneration and fat is apt to be desposited in excess throughout the body, hence body is well covered with fat.

In consequence of the fatty condition of the heart muscles, the ventricles become dilated, and mitral valve often becomes incompetent.

The shortness of breath of which the patient complains is due to a double cause viz :—

- (1) Deficiency of hæmoglobin in blood, this necessitates increased depth of respiration.
- (2) Fatty dilated condition of heart.

Hence the importance of resting the heart, and of preventing muscular exertion and mental excitement by keeping the patient at rest in bed.

In conclusion :—

1. Patient should be kept at rest in bed.
2. All causes of physical and mental excitement should be prevented.
3. A light nutritious diet chiefly milk should be given.
4. Gastro intestinal troubles should be rectified by alkalies etc.
5. Functions of bowel should be carefully regulated by aperients *e.g.*, mag-sulph.
6. Large doses of Iron should be administered in gradually increasing doses.

N.B.—Dr. Melland in an interesting article appearing in the *B.M.J. of December 11, 1909*, describes a method of treatment which he has successfully employed. It is based on the researches of Haldane and Lorrain Smith, who showed by their carbon monoxide method that in chlorosis although the percentage of hæmoglobin in the blood is so much diminished, total amount of hæmoglobin in the body is fully up to the normal ; that is to say, the anæmia is only relative, being due not to a deficiency of hæmoglobin but to an excess of plasma. Theoretically, therefore, by diminishing the fluid portion of the blood, it should be possible to cure chlorosis without iron. All that is necessary is to reduce the fluids of the body, and to prevent re-accumulation. The variety of means employed to this end constitutes Dr. Melland's treatment.

In the first place, removal of water by the bowel is recommended, and for this purpose small doses of magnesium or solium sulphate should be given. Of equal importance is it to encourage the secretion of urine, and here diuretics are recommended. Of these, he states, he has found theocin-sodium acetate the most reliable, given in doses of 5 gr. four times a day. Whichever diuretic is given, it should be

combined with digitalis, 5 min. of tincture with each dose being found most suitable. To increase elimination of fluid by the skin, jaborandi might be used, and such measures as hot baths, vapour baths, or hot packs. Another point is the inducing of emesis by small doses of sulphate of zinc.

Not only however, must the elimination of water by the bowel, kidney, and skin be encouraged, but the intake of fluid has to be limited. In some cases patients said that they had been in the habit of drinking unusually large quantities of fluid. An important means of diminishing this tendency is the taking of as little salt as possible with food. The power of salt to retain fluid in the body is well recognised, and in persons whose kidneys are defective an excess of salt often leads to the appearance of œdema, which disappears when the salt is discontinued.

Serum-therapy in chlorosis :—

Dr. Delearde and Paquet recommend sub cutaneous or oral administration of the serum with marked success. Intravenous injection 15. c. c. or subcutaneous injection of 30. c. c. of fresh serum in Hæmophila is recommended.—*Edinburg Med : Journal Vol. ii Page 270, 1909.*

It causes the hæmophilic blood to clot in approximately normal time.

Pernicious anaemia.

From our present knowledge of its pathogenesis we conclude :—

1. That the etiologic agent is essentially a severe poison that has a selective degenerative action not only on the bloodmaking structures, but also on the spinal, heart muscle, liver and kidneys.
2. That the poison is absorbed from the gastro-intestinal tract.
3. That hæmolysis *i. e.* destruction of red blood corpuscles is going on at one end of the circulation (*says in the portal circulation*).

4. That rapid production of red blood cells is hurrying on at the other end of the circulation *i. e.* in the marrow of the bones, consequently there is excessive and pathological activity of the bone-marrow; and as a result of this excessive activity of the bone marrow large numbers of immature red cells—magalocytes (*large red cells*)—and megaloblasts (*nucleated red cells*) are thrown into the circulation. We divide pernicious anæmia according to the changes produced in the bone-marrow viz :—

1. *Hyperplastic :*

2. *Aplastic :*

Hyperplastic

1. Presence of erythroblasts
i. e.

"Showers" of unripe red cells
—Megalocytes, megaloblasts
—in the circulation.

Circulating blood shows evidences of active regeneration going on in the bone-marrow. Nucleated red cells are present.

2. Bone-marrow is bright red.

3. Colour index is high,

4. Reduction of protective polymorphonuclear leucocytes and corresponding increase in mononuclear or lymphocytic type of cell.

Aplastic :

1. Absence of erythroblasts. Apparently there is no active response on the part of the marrow to the injurious influence, or it is unable to make up the losses sustained by hæmolysis, and an atrophy results

Nucleated red cell are usually absent.

2. Bone-marrow is yellow colour, and a fatty marrow is formed from end to end in the long bones, due to atrophy of erythroblastic tissue.

3. Colour index is generally low.

4. Granular variety of leucocytes is very poor.

Hyperplastic.	Aplastic.
5. Occurs in middle aged man.	5. Occurs in young person, mostly woman.
6. Hæmorrhages etc., are less common.	6. Hæmorrhages ('subcutaneous, baccal') are more common.

A discussion between Dr. Hale White and Dr. Cabot.

Dr. Hale White supports the theory advanced by Hunter in 1888, (*Severest anæmia* : Vol 1, 1909) and states that "As so much free iron is found in the liver, I suggest that the destruction of red cells and hæmoglobin takes place somewhere in the portal area, and the free iron is consequently deposited chiefly in the liver."

Dr. Cabot (*in Osler and Mc. Crae's System of Medicine*) says:—"It has been shown, however, that when hæmolytic agents are introduced through the blood stream itself, these iron deposits occur in the same way as in pernicious anæmia of the ordinary type. We have no reason, therefore, to find in the hepatic iron deposits an evidence that the hæmolytic processes takes its origin from the gastro-intestinal tract."

Dr. Hale White says that, "any changes in the spinal cord are uncommon in pernicious anæmia." But this is surely not true. Thus Cabot says that "Lesions have been found in 82 cases (84 per cent.) of those examined, while in only 14 was the cord examined and found to be normal."

Treatment of Pernicious Anaemia:—

On account of the researches of Herter, attributing to anærobic bacteria a prominent role in the intestinal fermentation, which is regarded as the source of the enterogenic origin of the disease, various measures have been proposed for keeping the bowels aseptic, for cleansing the bowels etc.

The writer advises the disinfection of the intestine—the labour of a Sisyphus! by benzo-naphthol, formedyne, salol, thymol etc.

"Clean out, clean up and keep clean" the bowels by colonic irrigation with tepid normal saline solution.

The writer recommends various medicines which stand the test of time :—

1. Liq : arsenicalis m iv—x thrice a day.

If arsenic fail, proto-nuclein tablet gr. iii thrice a day is recommended.

2. Red bone-marrow is taken out of the cancellous textures of bones and given in capsules or you can administer thus :—

R.

Red marrow from teibia of calf

Glycerine

a.a. ʒ. ii

Rub in a mortar , add port wine if required.

The writer recommends some of the bonemarrow preparations, virol Roboleine (*oppenheimer and sons*) ext. of red bone marrow (*Armour*), but fresh marrow is undoubtedly the best.

- 3 Raw meat Juice.

4. Old red wine.

5. Sir Willium Broadbent recommends phosphorus.

6. Hunter speaks highly of.

- (1) Antiseptic gargle as the disease is caused by septic absorption from decayed teeth and unhealthy gums.

- (2) Gastro-intestinal antiseptis.

- (3) Administration of arsenic.

- (4) Antistreptococcus serum.

Injection of antistreptococcus serum is efficacious. (*Clinical Studies: Oct: 1901.*)

Transfusion of blood has some supporter.

Vessels have been carefully sewed end to end ; so that transfusion has been deprived of the risks of clotting etc.,

hitherto so common with the older method which connected the donor's artery with the patient's vein by means of a rubber tube.

The result seems in some cases "nothing short of a resurrection from the dead" but it is attended with practical disadvantage.

Inhalation of Oxygen is sometimes useful as a palliative remedy.

N.B.—Iron is useless as each individual red corpuscle contains more than normal amount of iron.

Hygienic treatment :—

Absolute rest in bed on account of low blood count, and physical weakness. He should be in a well ventilated room.

Psychical treatment :—

Patients owing to a lowered Psychical balance, are not easily controlled by the physician. They become an easy prey to "Faith cure".

1. Dietetic treatment :—

On inquiry, it will usually be found that the appetite of chlorotic girl is uncertain and capricious. Both the quantity and the quality of the food require attention—the former because in all probability insufficient, the latter because, as a rule, proteins and fats are not taken in sufficient amount, while carbohydrates are in excess. Moreover, all kinds of indigestible articles are taken on account of their tartness or pungency. There is a sensation of fullness after meals with flatulence and eructations, and, indeed, there may be pain and vomiting marked enough to lead one to suspect gastric ulcer. There is almost always constipation alternating, it may be, with diarrhoea ; in any case, there is always intestinal irregularity, though it must always be borne in mind that the sepsis may have some other origin, as, for instance, decaying teeth and suppurative gingivitis.

The writer recommends purin free diet and soured milk to reduce intestinal fermentation. Asparagus, pears, peas, beans, and potatoes are rich in iron in the most assimilable form and are therefore ordered.

If vomiting be present, no food at all should be given for a day or two, the patient being merely allowed to sip hot alkalized water (five or ten grains of bicarbonate of soda to the ounce). Hot saline enemata may also be administered (three or four pints in the twenty-four hours). Boiled milk with barley water and soured milk may then be given, the patient mean-while being kept in bed. As the symptoms subside, the quantity of milk may be increased (four to six pints of boiled milk and half a pint, or a pint, of soured milk). The milk should be given frequently, half a tumblerful at a time. If there be much nervous irritability, a little laudanum may be added morning and evening.

The constipation may, for a time, resist the action of aperients and in such case the bowels should be cleared daily by means of soap and water enemata administered through a long rectal tube.

As soon as the gastric symptoms have subsided, solid food may be administered, beginning with stale bread steeped in milk, semolina, arrowroot, and vermicelli. In a few days it will be permissible to include some light fish—Koi, Mangoor, or singhei—plainly boiled and flavoured with lemon juice, and poached or scrambled eggs. Next we may give pounded chicken, or mutton, provided the patient can masticate the latter properly. Cream and butter should be taken freely.

Not until we have evidence that this more liberal diet is tolerated is it wise to exhibit iron in any form, and when we decide to do so it will be well to begin with some organic compound of the metal, since this is less apt to cause constipation and gastric disturbance. Vegetable bitters or light

beers are useful at this stage to stimulate the appetite and aid digestion.

The following diet tables, based on those drawn up by Dr. Jhon M. Cowan,* embody the principles enunciated above :—

Milk Diet.

4 a.m.—Milk, 10 oz. (hot or cold).

8 a.m.—Bread and milk, 15 oz.

11 a.m.—Lactobacilline soured milk, 4 oz. (or more).

1 p.m. - Milk pudding with milk, 15 oz. (cornflour, ground rice, semolina, sago, tapioca, arrowroot, custard)

3 p.m.—Benger's food, 10 oz., or soured milk, 6 oz.

5-30 p.m.—Milk pudding or bread and milk, 10 oz.

8 p.m.—Milk, 10 oz.

Light Diet.

4 a.m.—Milk, 10 oz.

8 a.m.—Milk or weak tea with milk, 10 oz ; bread and butter, 2 oz. ; white fish with white boiled sauce, 4 oz. , or an egg, lightly boiled or poached.

11 a.m. Lactobacilline soured milk or Benger's food, 10 oz,

1 p.m.—Chicken broth or clear soup 10 oz. ; chicken or white fish, 1½ oz. ; bread, 1 oz. ; potatoes, 2 oz. ; vegetables 1 oz. (cauliflower, cabbage, sprouts, &c.) ; milk pudding, 10 oz.

5 30 p.m.—Milk or weak tea with milk. 10 oz. ; bread and butter 2 oz. , one egg or white fish, 4 oz.

8 p.m.—Milk, 10 oz. , cream, 10 oz. a day.

Full Diet.

4. a.m.—Milk, 10 oz.

8. a.m.—Milk, or weak tea with milk, 10 oz. ; bread, or toast, and butter, 4 oz. ; white fish, 4 oz. (or one egg).

*"Diet and Dietetics," by Dr. Sutherland.

11 a.m.—Soured milk, or Benger's food, 10 oz.

1 p.m.—Broth. 10 oz. ; meat, boiled or roasted (chop, steak, mutton, chicken) ; bread and potatoes, of each, 2 oz. : milk pudding 10 oz.

5-30 p.m.—Milk or weak tea with milk, 10 oz. ; bread and butter, 4 oz. ; an egg or white fish, 4 oz.

8 p.m.—Milk, 10 oz. or soured milk, 6 oz.

Cream, 10 oz. a day.

As much variety as possible should be introduced into the preparation of the food. Fruit jellies, stewed prunes, stewed plums, dates and figs are useful adjuncts.

LEUKÆMIA.

Leukæmia is a disease characterised by the presence in the blood of an increased number of white cells (*leucocytes*), associated with changes either alone or together in the spleen, bone-marrow or lymphatic glands.

There are two main types:—

1. **Spleno-medullary Leukæmia**, in which the changes are especially localized in the spleen and the bone-marrow, while the blood shows a great increase in elements which are derived especially from the latter tissue.
2. **Lymphatic leukæmia**, in which the changes are chiefly localized in the lymphatic apparatus, the blood showing an especial increase in those elements derived from the lymph glands

The essential clinical characteristic of leukæmia:—is the presence in the blood of a large percentage of myelocytes in spleno-medullary form and an altogether abnormally large percentage of lymphocytes in lymphatic type.

Classical symptoms common to both varieties are :—

1. Progressive enlargement of abdomen.
2. Shortness of breath.
3. Bleeding from nose is common.

Treatment :—

The patient should be placed under the most favourable conditions—in a healthy bracing climate on a dry soil, with good air and good food. He should if possible be free from worry or mental emotion. The most valuable drug is arsenic, which should be commenced in small doses and gradually increased. All these indications may probably be best fulfilled by sending the patient to undergo a course of arsenical waters at La Bourboule, in France (Department Puy-de-Dôme). Cold douches with the galvanic and faradic currents may possibly be useful.

Of this ointment the patient introduces into each nostril a piece about the size of half a pea, and lightly rubs it into the inner surface. When this amount is exhausted, of which he is made aware by no longer tasting the saccharin, he makes another application.

Catarrhal sore throats are favourably influenced by this treatment, as well as the accompanying hoarseness. An inflammatory sore throat (*parenchymatous*) runs its course and cleans up more quickly. The method is also of use in the secondary treatment of nasal and pharyngeal diphtheria, as well as in coryza.—*The Practitioner*.

LARYNGITIS.

Laryngitis or inflammation of the larynx is of two kinds :—Acute and chronic.

Acute Laryngitis :—

Moisten the air of the room with the medicated vapour of boiling water, give hot milk and Soda water for drink, spray the throat with hydrogen peroxide and take other precautions as in pharyngitis.

Chronic laryngitis :—

Give complete rest of the voice and remove the cause of the disease if possible. Spray inside of the larynx by means of a laryngeal throat atomiser or a paroline atomiser any of the following :—

(1) R

Acid carbolic	gr. x
Oil eucalyptus	m xii
Menthol	ʒ. ss
Hazelline	ʒ i
Pinol	ʒ. ss
Peroline	ad. ʒ. i.

Mft, to be sprayed thrice a day.

(ii) Chloretone inhalent (*P. D. & Co.*,)

Suck any of the following voice tabloid or tablet.

(i) Tabloid Potassii chloratis et Boracis et cocainæ Co ;
(*B. W. & Co.*):

(ii) Voice tablet (*P. D. & Co.*).

Dose—One to be dissolved in the mouth as required.

Internally:—

Strychnine has a powerful effect in improving muscular tone and is consequently useful in cases in which the approximation of the vocal cords on phonation is imperfect. Alcohol and tobacco should be prohibited. Massage over the larynx with warm mustard oil is good.

BRONCHITIS.

Bronchitis means inflammation of the bronchial mucous membrane.

Before describing the treatment of this disease, the writer thinks it is better to say a few words about the anatomy of bronchus.

In the larger bronchi the cartilage forms an incomplete circle just as it does in trachea, but as the tubes divide in the interior of the lungs a complete ring of cartilage is formed. In the smaller bronchi the cartilage becomes broken up, so that instead of there being a complete ring there are several discrete portions which are firmly held together by fibrous tissue, and in the smallest divisions there is no cartilage at all.

Muscular and elastic tissues are present throughout the whole system of tubes.

For practical purposes it may be said that the larger tubes, as regards the lumen, are non-dilatable, but they are subject to a narrowing either by muscular contraction or by swelling of the lining membrane.

A patient with bronchitic tendencies is always in a state of insufficient resistance to bacterial invasion and should as much as possible be kept away from exposure to infection. Autoinfection is more common than is supposed.

There are two kinds of bronchitis :—

1. Acute.
2. Chronic.

Acute bronchitis means acute catarrhal inflammation of the bronchial mucous membrane.

It is bilateral.

Repeated attacks of bronchitis lead to chronic bronchitis.

The direct cause of bronchitis, in the majority of cases, is an infection by micro-organisms (*micrococcus catarrhalis* etc.,) ; it is a common sequence of cold.

Winslow and Robinson point out that bacteriological studies have shown that quietly expired air is germ-free.

Flügge and his pupils have shown to the bacteriological world beyond the shadow of a doubt that in sneezing, coughing, and loud speaking a spray is thrown out which contaminates the air with bacteria for a considerable distance from the mouth.

The mouth spray so to speak, is a fairly coarse rain which settles for the most part in 15 to 20 minutes, and that most of the spray is so coarse that it settles much more rapidly. (*Journal of Infectious Disease* for January 1910.)

Physicians should bear in mind three points in the treatment of bronchitis :—

1. To keep up the patient's strength.
2. To relieve the bronchial spasm as much as possible.
3. To loosen the catarrh.

There are three kinds of treatment :—

- i. Prophylactic.
- ii. Abortive.
- iii. Medicinal.

i. Prophylaxis :—

1. Children should be in the open air as much as possible during the day and enjoy as much free ventilation from the outer air at night as may be compatible with prudence.
2. Sudden change of temperature should be carefully guarded against.
3. Hygienic treatment of the skin is very important.

“An excessive amount of clothing by night and day with wraps round the neck and wool next the skin, excludes too completely the oscillations of the outer temperature which should act as a stimuli to the cutaneous surface. Moreover, the constant moist heat which is thus maintained tends to make the skin delicate and to depress its power of reaction.”—V. Ewart.—(*Allbutt's System of Medicine, Vol. v.*)

ii. Abortive treatment :—

If the patient be seen upon the onset of the first signs of bronchial catarrh, treatment should be immediately instituted with a view to abort the disease *viz.*

- (a) A full dose of saline laxative should be administered and repeated in 2 or 3 hours if the first dose fails to move the bowels freely.
- (b) He should take a hot bath and go to bed as soon as the bath is over; if there be any objection hot foot bath may serve the purpose.
- (c) A glass of hot lemonade should be drunk.
- (d) The patient is then covered with woollen blankets with a view to promote diaphoresis.

(e) *Internally* :—

℞

Tinc : Belladonna	m v.
Aq : Camphoræ	ad. ʒ. i

Mft. for a dose: Sig. one every hour until the physiological action of belladonna is slightly felt when reduce the dose so as to maintain the effect.

If these measures do not break up the attack within 24 hours treat the patient for acute bronchitis.

iii. Medicinal treatment :—

1. A dose of calomel followed by a saline will do good in every way.
2. All drinks should be given hot.
3. Citrated milk is allowed.

Sodii Citrate gr. $1\frac{1}{2}$ should be added to an ounce of milk.

4. As a rule alcohol is unnecessary.

Treatment of Acute Bronchitis :—

Internally :—

(i) R.

Liq : Ammon citratis	ʒ. ii
Tinc : Camphoræ Co.	m. xx
Vin : Ipecac	m. vii
Pot : Citras	gr. x
Syr : Althæ	ʒ j
Aq : Anisi	ad. ʒ i

Mft. for a dose : Sig : one every 3 hours.

(ii) R.

Vini antimonialis	m. iv
Spt : etheris nitrosi	m. xx
Liq : ammon citratis	ʒ ii
Tinc : Camphoræ Co.	m. xx
Aq : anisi	ad. ʒ. i

Mft. for a dose : Sig : one every three hours.

Locally :—

R.

Lint : Ammonia	ʒ. iii
„ Terebinth	ʒ iii
Saphonis	ʒ. ii

Mft. to be rubbed on chest twice a day.

ii. Hot foot-bath is very useful as an adjuvant to vascular stimulant in relieving congestion and preventing inflammation of bronchitis.

Inhalation :—

- (a) A few drops of Spt Chloroform in a steam inhaler is used to allay irritable cough.
- (b) Steam is useful in allaying and loosening a tight and tenacious cough.

Treatment of Chronic Bronchitis :—**1. Stimulant Expectorant :—**

It stimulates the heart, increases blood pressure, and diminishes secretion by stimulating relaxed mucous membrane. The following are the best stimulant expectorants, *e. g.*, Ammon Carb., all Aromatics, Senaga, Squill and Strychnine.

R

Ammon Carb	gr. iii
Tinc: Carminative	m. x
Syr: Scillæ	ʒ. ss
Inf. Senegæ	ad, ʒ. i

Mft. for a dose : Sig: one every hour with a tabloid of Strychnine sulph gr. 1/64.

2. Sedative Expectorant :—

It depresses the heart, lessens blood pressure, and increases secretion.

When cough is dry and distressing, prescribe :—

- (a) Sedative expectorants, *e. g.* Bromide Codein, Morphin Heroin, Dionin, Tinc. Camphor Co. They have a soothing influence over mucous membrane.
- (b) Promote secretion by Ipecac, Ammon. Chloride, Apomorphin, Antimony and *Saline Expectorants*, *e. g.* Pot. Iodide, Alkalies in Rheumatic or Gouty cases.

℞

Ext, Ipecac liq.	m. i
Ammon Chloride	gr. vii
Pot. Iodide	gr. iv
Pot: Bicarb	gr. x
Ext: Glycyrrhizæ liq.	m, xx
Aq. anisi	ad. ℥. i

Mft. for a dose: Sig. one thrice a day.

3. When sputum is abundant prescribe Antiseptic expectorant, *e. g.* Creasote, Guaiacol, Petroleum (*in the shape of Angier's Petroleum Emulsion*) Turpentine, Tolu, Camphor, and Senega.

℞

Creasotal	m. v.
Glycerine	m. x.
Syr : Tolu	m. xx
Syr : Cascara	m. xxx
Inf : Senegae	ad. ℥. i

Mft. for a dose : Sig. one thrice a day.

N. B.—There are two excellent preparations of Creasote.

- (i) Creasoted Cod Liver Oil, with Hypo-phosphate of Calcium and Sodium. (*P. D. & Co.*)
- (ii) Cream of Malt with Cod Liver Oil, Hypo-phosphites and Creasote.

Inhalation :—

Vapours of Creasote, Terebin, Pinol and Eucalyptus.

Locally :—

℞.

Valsal Iodine 10 per cent.	℥. iv.
Camphor	gr. xv.
Oil Cajuput	℥. ii

Mft. to be rubbed over chest twice a day.

N.B.—There are lots of patent cough medicines which, so to speak flood the market. One may often learn much from quacks, though such men have neither honour nor principle enough to impart any of their knowledge for the good of humanity as a rule,

All knowledge in medicine should be the property of the profession, however obtained by any physician, if he think it an honour to be called a physician, and the man who strives to make a secret of any achievement in medicine is playing a traitor to himself, the profession and to humanity. However the following are worth trial, as their compositions are given and their combinations are very attractive.

- (a) Pino-dyne (*Pinus Canadensis*) Heroin, Codein, Terpin Hydrate and Senega—(*Oppenheimer & Sons*).

Dose:—A teaspoonful thrice a day.

- (b) Anodyne Pine Expectorant (*P. D. & Co.*) It contains among other things, *Pinus Strobilus*, Morphyne Acetas and Chloroform. It is particularly valuable for the alleviation of a dry spasmodic cough with little or no expectoration.

- (c) Syr, Cocillana Co. (*P. D. & Co.*) It contains among other things, Heroin Hydrochloride, Cocillana, Squill and Menthol.

Dr. Wilcox in the *Therapeutic Gazette June 1893*, recommends Cocillana in preference to Ipecac, Apo-Morphine in Acute and Chronic Bronchitis. It liquefies the secretion and relieves acute exacerbation. It is contra-indicated in Senile Bronchitis.

(d) Pertussin (*Ext. Thyme Saccharat*) is used in Asthma, Whooping Cough, Tracheal and Bronchial Catarrh.

4. The writer recommends the following in Bronchi-ectasis with cough and bronchial irritations:—

Rx

Elix : Heroin et Terpin	
Hydrate (<i>P. D. & Co</i>)	3. js
Syr : Prunum Virginium	3 ss
Syr : Picis	m. xx
Syr : Cascara	m. xx
Aq : Laurocerasi	3. i
Aq : Anisi	ad. 3. i

Mft. for a dose : Sig. one thrice a day.

5. Antispasmodic Expectorant :—

e. g., Lobelia, Iodide etc.

(*Vide* my article on Asthma.)

6 When dyspnœa and other cardiac symptoms present use cardiac tonic and stimulant.

Strychnine gr. 1/30 every four hours, increases the tonicity and resistance of the bronchial tissues, causing contraction both of the bronchial musculature and the large respiratory muscles, thus tending to expell the tough visid mucus and to overcome the morning and nocternal dyspnœa. A full dose of strychnine taken at bed time often will prevent attacks of dyspnœa during the night.

7. If there be Gouty Diathesis mineral water 3 ozs. of hot water to be taken by sips early in the morning.

8. Patients with intrathoracic congestion derive a great deal of benefit from walking in wet grass, as taught by the great hydro-therapeutist, Father Kneipp

By far the most satisfactory method of treating chronic bronchitis is change of air.

During convalescence—triple arseniates of iron, quinine and strychnine with nuclein are recommended. Free elimination by the bowels, kidneys and skin should be maintained throughout the whole course of the disease.

PNEUMONIA.

Pneumonia means an inflammation of the pulmonary tissue proper caused by *pneumo cocci* which enter the lungs by inhalation (J. D. WASHBOURN, M. D., F. R. C. P.)

A. Mc. Phedvan in *Monthly Cyclopædia and Bulletin June 1910*, defines pneumonia as a local specific inflammation due to a local infection which results from the general infection, the lung being infected through the blood-stream.

Prof: Osler in *the Clinical Medicine Feb. 19, 1908* remarks :—

“The great respiratory infection, the most formidable acute disease of modern times, well called, in Bunyan’s phase, the “*Captain of the men of death*,” is inflammation of the lungs, from the association with which the pneumococcus has had its most popular name.”

Pneumo-cocci are widely distributed and almost universally present in the mouth.

In all ordinary circumstances resistance is sufficient to ward off real infection, but under adverse circumstances, as by fatigue, starvation, cold, overdoses of alcohol etc., the bodily resistance (*vitality*) may be lowered to a point which permits them to gain access to suitable soil for rapid propagation, and infection occurs.

Thus we see a bacteria which remains in a dormant non-pathogenic condition in health, spring to its life and becomes pathogenic under favourable circumstances when the vitality is lowered.

Pneumonia is really a septicemia. Rosenau (*Journal of Infectious Diseases 1904, vol i. Page 280*) found pneumococci in the blood in 132 out of 145 cases examined.

“The disease is infectious and selflimited, there is nothing for us to do but to guide it if possible to a favourable termination.”

(*Twentieth Century Practice of Medicine. Vol xvi Page 89*)

The chief indications are :—

- (1) To allay the inflammation.
- (2) To watch the heart.

Every kind of active treatment followed in a routine fashion is *ipso facto* bad in principle ; the true treatment is the common sense.

It is an established fact after the discovery of pneumococci that no earthly means known at present can cut short the duration of pneumonia, an attempt to bring down fever by antipyretics, such as antifebrin, antipyrine, phenacetin, are not only useless but injurious (SIR W. H. BROADBENT, *Bart* : M D., F. R. S., F. R. C. P.).

Dr. Alfred Scott (*Lancet June 3, 1911*) recommends 10 to 15 grains of *aspirin* at the onset of the attack and repeats this every four hours so long as any raised temperature persisted. The author states that in every case the disease has aborted and believes that the drug has the power to cure pneumonia.

The writer does not agree with Dr. Alfred Scott and advises his readers to follow after Sir W. H. Broadbent,

It was probably pneumonia and its treatment to which the poet had reference when he wrote the following —

“ A little learning is a dangerous thing.
 Drink deep, or taste not, the Pierian spring ,
 For shallow draughts intoxicate the brain.
 While drinking largely, sobers us again.”

The disease will have its own course; the fever will end by crisis either on the 7th or 9th day of its course, when the vigilant physician will keep up his patient with food and stimulants.

Hektoen (“ *Modern Medicine.*” Vol. ii. Page 48). Says:—

“The pneumococci as a rule disappear from the circulating blood as crisis comes on.”

Wolff on the other hand (*Journal of Infectious diseases May 1906*) remarks that :—

“Pneumococci persist in the blood for days after the crisis has passed and are then just as virulent as during the fever.”

The disease passes through three stages.—

1. Engorgement (*congestion, hyperæmia*) from 1. to 3 days.

452 DISEASES OF THE RESPIRATORY SYSTEM.

- 2 Exudation (*red hepatization*) from 3 to 7 days.
3. Resolution (*grey hepatization*) from 1 to 3 weeks.

N. B —In exceptional instances there may be suppuration and gangrene

Leucocytosis is stimulated by :—

- (1) Injection of nuclein.
- (2) 'Injection of fresh horse serum. (G. A. Gibson : *Glasgow Medical Journal* May 1911.)
- (3) Injection of leucocytic extract as recommended by Alexander.

Toxæmia manifests itself by : —

- (i) Increased stimulation of the nervous system *e. g.* sleeplessness, delirium
- (ii) The results of over stimulation *e. g.* depression, coma etc.

The management of toxæmia consists in.

- (1) Enforcing resistance.
- (2) Increasing elimination.
- (3) Counteracting the effects of the toxins

No antitoxin thus far obtained can be relied upon for therapeutic relief.

Resistance to the toxins can be secured by aerotherapy, hydrotherapy, careful feeding and when required, moderate stimulation.

In severe toxæmia and great leucocytosis Prof. G. A. Gibson M D., D. SC, F. R. C. P., LL. D., F. R. S. recommends hypodermic injection of Quinine acidi byhydrochloride gr. ii every two hours.

Elimination is secured by diuresis and diaphoresis.

The chief danger of the patient at such times lies in the toxæmia of the disease, and by stimulating metabolic processes *e. g.*, x-rays etc., we should be running a grave

risk of swamping the economy with a large quantity of poisons that can be eliminated.

(*A System of Medicine by Osler and McCrac Vol ii, Page 646*).

The treatment is divided into two groups:—

I. Prophylactic.

II. Medicinal

i. **Prophylactic.**—It is now admitted by all hands that pneumonia occurs endemically, *i. e.*, when it has obtained a footing, it is with difficulty expelled from a dwelling. It seems to hover about or cling to certain buildings (R. W. PHILIP, M. A, M. D., F. R. C. P. E.), hence the room of pneumonic patients should be thoroughly disinfected by some antiseptic lotion, *e. g.*, Phenyle or Hydrarg perchloride, to destroy the poison *in situ*, if there be any, followed by a thorough white-washing. The room should be dry, well aired and free from furniture. The patient must spit in a cup containing some antiseptic lotion.

ii. Medicinal :—

Old method of treatment :—*Bleeding, blistering, starvation and purging were the potent weapons of the physicians of the past, and are now obsolete.

New method of treatment :—

Internally :—

Administer a brisk purge at the beginning of the disease, followed by a saline draught in the morning.

The use of antimony is spoken of highly by SIR SAMUEL WILKS, *Bart*, M. D. It is administered during the first days of pneumonia, mostly to plethoric patients with high bounding pulse.

The treatment with Digitalis as a routine has recently found several supporters (J. DRESCHFIELD, M. D., B SC., F. R. C. P.)

*Venesection—"a degenerated edition of the vampirism of bygone days"—has now been obsolete.

454 DISEASES OF THE RESPIRATORY SYSTEM.

1. The use of arterial sedatives is loudly recommended by the writer where arterial tension is high, especially in full-blooded patients :—

R̄

Tinc : aconite	m. ii
Vin : Antimonialis	m. v
Spt : Ammon : Aromatic	m. xx
Inf : Digitalis	ʒ. i
Aq : Anisi :—	ʒ. j

Mft : for a dose : : Sig : every 2 or 3 hours.

At the very onset of the disease watch the pulse cautiously ; when it begins to be soft, blood pressure low and free diaphoresis, stop the mixture and treat him with stimulants.

2. The time-honoured practice of the use of stimulant expectorants is given below, though PROF. OSLER remarks :—

“Expectorants are rarely of any value in pneumonia.”

(a) R̄.

Ammon. carb	grs. iii
Spt. Ammon. Aromatic	m. xx
Spt. Cajuput	m. xv
Tinc. Scillæ	m. v
Inf. Senegæ	ad. ʒ. i

Mft. for a dose : sig : one every 4 hrs. up to 4 doses a day.

(b) Tabloid Hypod : Digitalini et Strychnine Sulph.
grs. 1/100 each.

Direction :—one every 4 hrs. alternately with the above mixture up to 4 within 24 hours.

It guards against cardiac failure.

3. Free administration of spirit Vini : Gallici 2-4 oz. within 24 hours.

Alcohol is the most trustworthy remedy in pneumonia which can tide the patient over the most dangerous period. (WILLIAM OSLER, M. D., F. R. S., F. R. C. P.)

N. B.—(a) Calcium chloride ʒgr. v-x had been advocated by DR. CROMBI with a view to prevent serous

exudation in the alveoli of the lungs : it is, no doubt, an excellent remedy in pneumonia and requires careful watching.

- (b) Creasotal : m. v-x with milk has been recommended at the very onset of the disease by some leading practitioners of the metropolis with a view to subdue temperature, but it is wrong in principle. The temperature is not a source of danger, and nothing is to be gained by violent efforts to reduce it (SIR WILLIAM H. BROADBENT, *Bart* : M. D., F. R. S., F. R. C. P.)

Externally : -

Hydrotherapy :—

1. "Derivation" (*depletion of the congested area*) is the alpha and omega of treatment during the first stage of the disease.

The various modes of water application *e. g.*, application of cold moist-pack from the feet to the costal border, hot foot bath etc., are advocated by the American physicians.

The engorged area is depleted by drawing the bulk of the blood to the lower extremity.

This is to speak ironically venesection without the loss of blood.

Aerotherapy .—

Fresh air stimulates the heart and respiration. It supplies requisite oxygen, relieves "air hunger," promotes sleep, quiets restlessness and promotes digestion.

As Jurgensen long since pointed out "fever patients can not catch cold."

Franklin wrote, "colds, so-called, are utterly independent of either wet or cold".

2. DR. LEES advocates the application of ice bag over the chest : the writer has never tried this heroic treatment in a warm damp climate like Bengal.

Other local methods ;—

1. Application of warm poultices over the chest, to be changed every 3 hours. Everything that increases the expansion of the lung lessens the danger of collapse and pulmonary changes around the pneumonic area. Heat adds force and power to the venous capillaries, unloading the congestion and throwing off the tissue waste. Heat stimulates the arterial capillaries, carries off the products of inflammation, and conduces to the quick restoration of the normal condition. It is the logical, physical reasonable and highly scientific method. (*Eclectic Medical Gleaner*).
2. Application of thermofuge or antiphlogistine to the chest. a convenient method consists in spreading the warm mass upon a piece of lint or flannel ; then wrap up the chest with absorbent cotton and bandage. It abstracts moisture from the tissue, retains internal heat, reduces swelling and capillary congestion, allays pain, and exerts its antiseptic and alterative effect.

Per rectum :—

Hot salt or normal serum solutions by the bowel (3. j salt to o. i. water), aids elimination, stimulates renal secretion, encourages all excretion, and lessens toxæmia.

(*Nothnagel's Encyclopedia of Practical Medicine, Disease of Lungs p. 547*).

Subcutaneous injections of essence of terebinth.

G. Dieulafoy in *the Text Book of Medicine 1910 Vol i, page 139*, advocates this treatment. as follows : —

“An injection of 15 minims of essence of terebinth—*i.e.*, 60 minims for four injections—is given by means of a sterilized syringe, in the subcutaneous tissue of the outer surface of each thigh and of the deltoid region of each arm.

These injections produce extremely acute pain, lasting about two hours. The next day the injected regions present an œdematous, whitish and diffuse thickening

Abscesses are formed and are called **Abscesses of fixation or abscesses of derivation.**"

Serum treatment of pneumonia :—Anti-pneumococci serum is in its infancy and requires trial in the hands of the profession to establish its supremacy : PSANTI and PIERACHINI in a paper in *Lo Sperimentale*, described the treatment of a large number of cases of pneumonia, and concluded that the serum exercised no beneficial influence upon the disease

"The serum is administered by subcutaneous injection in the same manner as the diphtheria antitoxin. The dose is from ten to twenty cubic centimetres, which may be given two or three times a day during the attack until the constitutional symptoms have commenced to subside."

Pneumonia by vaccine prepared from pneumococcus —

As soon as the positive phase is well established, usually from 36 to 48 hours after the first injection, a second dose of 2, 3, 4 or 5 times the sizes of the first should be administered. By these means the marked rise in available opsonin that naturally precedes the crisis, and the consequent fall in temperature and disappearance of physical signs, may be considerably antedated and the process of cure correspondingly hastened"

(*System of Medicine by Allbutt and Rolleston Vol. v. Page 246*)

Six cases of pneumonia, treated successfully with pneumococcus vaccine, are recorded. The ages of the patients varied from 66 to 83 years ; several had a marked alcoholic history and all were in poor condition, all but one having chronic nephritis, and all showing marked arterio-sclerosis. Treatment was commenced by giving 20 to 35 million killed

pneumococci from a previous case, and then preparing further dose from the organism isolated from the patients' own sputum. Fifty millions is the maximum dose. *H. A. Craig: Medical Record, Feb. 12, 1910*

In conclusion the writer remarks :—

Anti-pneumococcic serum is not antitoxic, but antibacterial, and would therefore require to be given at a very early stage of the disease, before the bacteria becomes firmly lodged, *i. e.* before definite symptoms are excited.

In delayed resolution of the consolidated lung and in circumscribed infections of other parts vaccines may prove of much benefit, as in such cases there is but little general infection.

Vaccines, therefore, appear to have a very limited field in the treatment of Pneumonia.

Eyre (*Allbutt and Rolleston's System of Medicine Vol v Page 241*) speaks in favour of vaccine therapy.

Latham has found pneumococcic vaccine given by the mouth to have a marked influence on the progress in two cases, and refers to reports of encouraging results from Bøllke's vaccine in severe cases of pneumococcic endocarditis.

Treat the patient symptomatically :—

1. Hyper-pyrexia :—(*Temperature 104 or above*)

- (i) Ice on head,
- (ii) Sponging with tepid water to which aromatic vinegar has been added.
- (iii) Sponging with ice-cold water though recommended, is not judicious.
- (iv) Don't use strong antipyretic drug.

2. Pleuritic pain.

(a) A mustard poultice locally.

(b) R

Valsal Iodine 10 per cent	℥. i
Oil Cajuput	ad. ℥. ii

Mft : rub the part well with this once or twice a day

3. Pericarditis —

A small blister in the neighbourhood of the heart

In pericardial effusion draw off a few drops of the fluid by a hypodermic syringe. if the fluid be serous, the pericardium may then be aspirated, if the fluid be purulent it should be incised and drained like an empyema. (*Dr Pye-Smith in the fifth volume of Prof. Clifford Allbutt's System of medicine P 125*)

4. Cough —

The writer recommends :—

(a) R

Menthol	℥. i
Thymol	℥ ss
Oil Eucalyptus	℥ iv
Alcohol 60 per cent	℥ iii

Mft. to be inhaled in a steam atomiser three or four times a day, the strength being half a drachm to an ounce of water.

(b) Inhalation of hot water or carbonate of ammonia with senega often gives relief (J DRESCHFELD, M D., B. S., F. R. C P)

(c) Inhalation of moisture-laden warm air is a splendid means of relieving cough.

5. Dyspnoea :—

(1) If due to the large amount of lungs involved or to heart failure, inhalation of oxygen is the best :

460 DISEASES OF THE RESPIRATORY SYSTEM.

Drs Willcox and Collingwood recommend inhalation of oxygen, passed through absolute alcohol

- (ii) If due to pulmonary œdema, venesection may be tried.
- (iii) If due to tympanitis the following is recommended :—

R.

Sodii sulpho carbolas	gr. iii
Sodii Bicarb	gr. x
Tinc Carminative	m. x
Tinc assafoetidæ	m. vii
Aq. Chloroformi	ad ʒ i

Mft. for a dose : Sig : one twice a day

6 Delirium —

Locally :—

Application of ice to the head

Internally :—

(a) Extra dose of Brandy

(b) R

Pot : Bromide	gr. x
Inf : Digitalis	ʒ
Aq. Caruæ	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day.

7. Insomnia:—

(a) Chloralamid. gr. x—xv.

Sig : at bed time :

(b) Bromural gr. v.

Sig : at bed time .

(c) Veronal gr. x.

Sig : at bed time :

N. B.—Opium is a dangerous remedy in pneumonia (SIR WILLIAM GAIRDNER & C. B., M D, L L D), it causes increased cyanosis and collapse probably from its paralyzing action upon the respiratory centre.

On the other hand SIR WILLIAM GULL ordered opium in pneumonia up to his last day (*Practitioner Feb. 1900, P 135*)

8. Vomiting :—

Locally :—

A mustard plaster over the pit of stomach.

Internally :—

Bismuth and Bromide in an effervescent form

9. Diarrhœa —

R̄.

Bismuth Subgallate	gr. v
Tannigen	gr. vii
Pulv. Cretæ Aromatic	gr x

Mft. for a pulv: Sig one, twice or thrice a day.

10. Diffuse fibrosis of the lung —

Crofton (*British Medical Journal Nov 2, 1907*) records a case in which the use of hypodermic injections of theosinaine was followed by the clearing up of a diffuse fibrosis of the lung as the result of pneumonia.

11. In pneumococcus septicæmia

R̄.

Quinine tannas (neutral)	gr. iiii
Ferrum Carbon. saccharatum.	gr iiii

Mft. for a pulv. sig: one, thrice a day.

12. Existing nephritis —

R̄.

Pot. citras	gr x
Caffinæ benzoas	gr. i
Inf. Digitalis	ʒ. i
Dec : Scoparia	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day.

13. Suppuration in the ear.

Wash the ear with hydrogen peroxide solution (1 in 4), pour 3 or 4 drops of hydrogen peroxide and watch whether any bubbles are coming out or not, and then close the meatus with a cotton plug

N B.—Hydrogen peroxide coming in contact with any organic fluid emits oxygen

14. Arterial pressure.

- (i) if high, give nitrites.
- (ii) if below normal, administer cardiac stimulants *e. g.* digitalis or strophanthus : (G. A. Gibson.)

Treatment during the stage of resolution :—

When redux crepitations are audible :

R

Ammon Carb :	gr. 111
Ammon Iodide	gr. ii
Calcium Iodide	gr. j
Spt Chloroformi	m x
Vin : Ipecac	m. vi
Aq : Anisi	ad. ʒ. i

Mft. for a dose :—Sig : one every 4 hours up to 3 or 4 doses within 24 hours.

Or

R.

Guaiacol carb	gr. i
Calcium Iodide	gr. i
Nuclein	gr x
(Put in capsule)	

Mft. for a dose :—Sig : one thrice a day

Treatment during crisis —

Internally :—

(i) Strychnine is our sheet anchor : Vini Gallici is no mean weapon at this stage : the writer recommends :—

R

Liq : Strychnine Hydroch	m iv
Vin Gallici	ʒ ii
Tinc : Cardamom Co :	m xx
Aq : Menth pip ,	ad. ʒ. i

Mft. for a dose : Sig : one every 4 hrs. till the pulse becomes steady and voluminous.

(ii) Pulv : Musk gr. ii in little honey every 4 hours alternately.

N. B —Digitalis should be stopped if the patient has been taking it all through.

Hypodermically :—

Strychnine Sulph. gr. 1/60 for hypodermic injection.

Locally :—

Hot bottles or hot blankets to the feet.

Treatment during convalescence —

Internally :—

Iodo Ferratose, a teaspoonful in water with 5 drops of Tinc : Nux Vomica twice a day after meal is strongly recommended by the writer.

Triple arseniates (*Iron, quinine and strychnine*) are recommended in the *American Journal of Clinical Medicine*. Arsenic powerfully induces fatty degeneration, and acting thus upon the forming products of inflammation it tends to rid the system of them quickly and in this way promotes a brief convalescence instead of a tedious one.

The patient should be on liquid diet: the quantity of alcohol should be greatly diminished.

Locally :—

Valsal Iodine, as in the above prescription, should be rubbed to the chest to aid resolution which takes place very slowly.

Prognosis.—

Alcoholics are bad subjects of Pneumonia (HECTOR MACKENZIE M. D., F. R. C. P.). Diabetics, Chronic Bright's Diseased, the aged and the very young are the worst patients.

When Crupous Pneumonia undergoes imperfect resolution, tuberculosis is likely to supervene (R. W. PHILIP, M. A., M D., F. R. C. P. E.).

Dietetic treatment —

1. Milk and lime water (*if acidity*)
2. Milk and soda water equal part (*if acidity*).
3. { Milk one ounce.
 { Sodii citratis gr. ii.

Milk treated with sodii citrate forms in the stomach a light flocculent finely divided curd which is easily digested.

Milk with milksugar to raise the caloric value of milk, (*120 calories to the ounce*), the daily need of the patient being 2500 to 3000 calories.

(*American Journal of Clinical Med. May 1909.*)

- 4 Horlic's malted milk when there is difficulty of procuring fresh milk, especially at night.
- 5 The white of two eggs stirred up in half a pint of cinnamon water to which one or two teaspoonfuls of brandy and a pinch of salt may be added.

In connection with the diet we have to consider the administration of *Sodium chloride*. For some reason, not yet definitely known, during an attack of Pneumonia, the chlorides are generally greatly diminished, often entirely absent from the urine for a number of days. It would seem rational, therefore, to suppose that these salts are required for some purpose by the economy. The salt may be given with the food or the beverages, by saline enema or in capsule.

(*A System of Medicine by Osler and Mc. Crae Vol ii. page 645.*)

- 6 Bengers Food and milk (*if diarrhœa*),
7. Plasmon arrowroot and milk (*if diarrhœa*).
- 8 Somatose and milk (*or milk somatose*).
- 9 Freshly made chicken broth or jug soup.
10. Panopepton
- 11 Palatable peptone.
12. Raw meat juice.

Hygienic treatment.

Next to the place in which pneumonia is treated comes the manner in which it is nursed. As Graves said years ago:—

“It is of the utmost importance to economize the patient’s strength in fever. The very act of lifting him up, or removing him from one side to another, tends to produce exhaustion.”

In pneumonia the patient should not be allowed to assume an upright position lest cardiac failure should ensue

(*Green’s Encyclopedia of Medicine and Surgery Vol. viii page 183*)

In conclusion warm bed, proper nursing, good nourishment and stimulants with strychnine and digitaline hypodermically if required are the very essence of medical treatment.

During the entire course of Pneumonia the supportive treatment stands foremost. First husband the strength of the patient and increase his resistance, then meet and control the symptoms as they arise, and always keep the old adage in mind “whatever you do, do prudently, and look to the end.”

Prof: Hare has very aptly stated:—

“The physician must be the watchman all the time, and the therapist only when treatment is actually needed.”

BRONCHO-PNEUMONIA.

(*Capillary bronchitis, lobular pneumonia.*)

This is essentially an inflammation of the terminal bronchus and the air-vesicles which make up a pulmonary lobule.

Broncho pneumonia is as a rule a secondary affection and bilateral.

The physician should bear in mind the following points:—

- (i) To relieve cough, pain and oppression of the chest.
- (ii) To promote secretion in the affected parts.
- (iii) To favour action of the bowels, the kidneys and the skin.

At the very onset of the disease.

Put the patient to bed, saturate the atmosphere of the room with medicated vapours of eucalyptus, terebene, pinol etc, wrap up the chest with thermofuge followed by a cotton-wool jacket, and prescribe the following :—

R.

Tinc: Belladonna	m 1
Tinc: Bryonia	m. 1
Liq: ammon citratis	3 ss.
Spt: ammon aromatic	m. ii
Aq: anisi	ad. 3 ii

Mft. for a dose : Sig. one every 3 hours for a child of 4 years old.

Belladonna diminishes secretion of bronchial tubes and pulmonary tissues and stimulates respiratory centre ; while bryonia exerts its specific action at this stage of the disease.

Broncho-pneumonia with thick tenaceous expectoration.

The writer recommends the following :—

R.

Liq : ammon Citratis	3 ss
Spt: ammon aromatic	m. ii
Sodii Benzoas	gr. i
Vin: Ipecac	m. i
Vin: antimonialis	m. 1
Syr: Tolu	m x
Aqua Anisi	ad. 3 ii

Mft. for a dose : Sig : one every 3 hours with alternate dose of Vini Gallici say 30 drops every 3 hours.

When febrile symptoms are about to subside and crepitations become moist.

The following is prescribed.

R,

Ammon Iodide	gr. i
— Benzoas	gr i
Liq : ammon Citratis	m. xx
Spt: ammon aromatic	m ii
Aq anethi	ad. ʒ. ii

Mft, for a dose Sig : one thrice a day

During Convalescence creasoted codliver oil with hypophosphites acts miraculously : Dose being half a drachm to a drachm.

This is particularly important in the case of children suffering from broncho-pneumonia after measles or whooping-cough.

Children should be removed as soon as possible to the seaside or at least to pure country air where the sacred Ganges flows fast.

In other respect the patient should be treated as mentioned in Pneumonia.

BRONCHIECTASIS

Bronchiectasis means dilatation of the bronchial tubes. The condition is met with most frequently as a complication of chronic bronchitis or chronic Pneumonia. For practical treatment we divide it under two divisions :—

1. Prophylactic.
- 2, Medical.

1. Prophylaxis is of utmost importance. The disease is likely to supervene in badly nourished delicate children and therefore when these are attacked by bronchitis or broncho-pneumonia, we should not only treat the local disease, but

also try to improve the general health and tissue vitality, being especially careful not to persist too long in the use of depressant pulmonary remedies.

Remove the patient to a suitable climate free from damp, fog and sudden change of temperature, and try to improve general health by tonics, proper food, breathing exercise and massage.

2. Medical treatment.

The main indications are :—

- (i) Empty the cavities.
- (ii) Relieve the fœtor.
- (iii) Promote contraction of the sacculæ and general improvement of respiratory function.
- (1) Empty the cavities.
- (a) Postural treatment (*viz. inversion of the patient, compression of the chest etc*) as a mechanical aid to bronchial outflow.
- (b) Liquifying expectorants : *e. g.*

Ipecac, Vin Antimonialis, Pot Iodide, Syr. Cocillana Co.

Writer's favourite formula :—

R

Vin : Ipecac.	m. v
Vin : Antimonialis.	m. iiss
Pot : Iodide :	gr v
Syr : Cocillana co	ʒ ss
Aq : Anisi	ad. ʒ. ss

Mft. for a dose : every 4 hours.

N. B.—Dr. Norris, Inspector in medicine at the University of Pennsylvania, has observed that Syr. Cocillana Co. increases fluidity of the sputum with corresponding facility in expectoration.

The object is to wash out the stale secretion by a more abundant flow of watery mucus. Continue it for several days followed by an emetic to clear off the tubes.

ii) Relieve the fœtor.

(a) Inhalation of vapour impregnated with antiseptics *e.g.* thymol, eucalyptus, creasote *etc.* through a spray or an atomiser.

(b) Mouth wash.

Dr. C. W. Glassington's formula :

R.

Acid Carbolic	ʒ. vii
Liq: Potassæ	ʒ. vii
Chloroform	m xx
Eau de Cologne	ʒ. xii
Liq: Cocci	ʒ. i
Aq: Rosæ	ad. ʒ xx

Mft. to be used as gargle.

(c) Internal administration of tar, creasote, turpentine essential oil *etc*

The writer recommends the following :—

i. Tabloid Picis et codinæ. one to be slowly sucked every 4 hours.

ii. Elixoid picis Co. (*B. W & Co.*)

Dose half a drachm thrice a day.

iii. R.

Ichthyol	m. xxx
Glycerine	
Syr. Aurantii floris	aa. ʒ. i
Aq. aurantii	ad. ʒ. iv

Dose a teaspoonful thrice a day

iv R.

Syr: picis liq. (u. s)	ʒ. ss
Syr: Cascara aromaticus	ʒ. ss
Ext. Ipecac : liq,	m. i
Ext: Nucis vom : liq.	m. i
Syr: Hemidesmus.	ʒ. i

Mft. for a dose : Sig. one thrice a day well diluted with water.

470 DISEASES OF THE RESPIRATORY SYSTEM.

v. Garlic acts as a general tonic and a local Stimulant.

(d) Intra laryngial injection of disinfecting sol :

R.

Menthol 10 parts

Guaiacol 2 parts

Oil olivæ 88 parts

Direction of use :—One drachm to be injected thrice a day.

The contraction of the Saccules and the general improvement of respiratory function are promoted by all the measures mentioned above.

During Convalescence, iron quinine and codliver oil perseveringly administered with intervals of rest and interludes of hepatic treatment are the best means to the end of strengthening both fibre and function.

Salt water bath is beneficial.

*ASTHMA.

The term "Asthma" means shortness of breath.

It is essentially a disturbance of respiratory innervation.

Chundra calls it a nervous storm.

Trousseau calls it an "epilepsy of the lung."

Burney yeo regards it as "respiratory neurosis,"

W. Hutchinson looks upon it as a "toxæmia."

In typical cases the dyspnœa is very severe. All the extraordinary muscles of respiration are thrown into violent contraction. The patient sits up panting for breath and ultimately lands himself, with perhaps some lessening of severity of each paroxysm, in a more prolonged or persistent stuffiness hardly less distressing to bear. He becomes in fact the slave of an appetite that he has whetted and that he cannot now control

The recurrence of asthma—*paroxysmal neurosis*—may in course of time so act on the nerve centres, as to diminish their control and to induce a fresh attack on less and lesser provocation. Recurrence indeed is largely the result of previous attacks"—*Allbutt and Rolleston : System of Medicine. Vol. v. P. 62.*

Dixon (*Proc Royal S. of Medicine 1909 April P. 120*) has pointed out :—

"A vicious circle was established, the more the chest expanded and the lungs over-distended the weaker its powers of expiration became."

*Bronchial asthma is a disease caused by irritation of the hyperæsthetic nervous system of respiration. Its cause is to be sought not in, but outside of the lungs. The mucous membrane of the nose is the portion of the respiratory tract most exposed to injuries from without, and anomalies of the mucous membrane and of development are caused which produce points of pressure that often excite bronchial asthma in persons of nervous disposition. *Otto Gunzel (Medsische klinik, August 8, 1909, New York Medical Journal, October 9, 1909).*

One is reminded of the story told of Graves, who is said to have visited two asthmatic patients in the same day : the first attributed his attack to a smoking chimney and the other made his chimney smoke to relieve his attack :

We can keep our foe in abeyance, but we cannot root out the disease in the truest sense of the term, altogether from the system.

For practical treatment the writer divides it into the following groups :—

1. Spasmodic or bronchial.
2. Cardiac.
3. Renal or Uræmic.
4. Pressure asthma.
 - (a) Gastric
 - (b) Asthma of Pregnancy.
 - (c) Aneurism or mediastinal growth.
5. Reflex irritation.
 - (a) Due to hypersensitive condition of the mucous membrane of the upper air passage *e. g.* Nasal polypus, Nasal congestion, or chronic thickening of the cavernous tissue covering the turbinated bone.
 - (b) Due to idiosyncrasy of certain odour *e. g.* Scent of hay (*Hay asthma*), Scent of cat, (*Cat asthma*) or Scent of certain gas, dust etc.
 - (c) Uterine diseases.
 - (d) Urticaria of the bronchi.

The chief indications are :

- (1) To alleviate the spasm.
- (2) To prevent the paroxysms.
- (3) To remove the cause.

The Relief of Spasm.

Inhalation :—

1. A few whiffs of Chloroform usually arrest the spasm.

N. B.—It should be administered by a medical man.

2. Inhalation of Nitrite of Amyl is efficacious in cardiac or renal asthma.

N. B.—The sedative kinds of inhalations do but appease by offering bribes to vicious nervous centres, and relaxes the bronchial musculature. Amyl nitrite is contraindicated where there is arteriosclerosis of marked type, through danger of rupture of an artery.

3. Inhaling the fumes of burning Nitrite some times checks bronchial spasm.

N B —The vapour, on reaching the mucous membrane, stupefies or exhausts the nervous centres, and stops the spasm for a time

4. Smoking stramonium cigarettes is very useful.
5. The vapour of warm water is far ahead of all kinds of smoke and vegetable dusts.

(*Nothnagel's Encyclopedia of Practical Medicine, Disease of the Lungs. P. 250*).

6. The inhalation of Iodide of ethyl 10 to 15 minims or more, on a piece of lint, held in the palm of the hand has been strongly advocated for the relief of asthmatic paroxysm.

7. G. Dieulafoy in *the text book of Medicine 1910, Vol i. Page 114*, recommends pyridine. It may be used, either by inhalation of 10 or 12 drops on a handkerchief, or by allowing the drug to evaporate slowly near the patient

8. The fumes of a powder of datura, hyoscyamus, belladonna, cannabis and potassium nitrate, equal parts, disposed in the shape of a cone and lighted.

Mechanical :—

1. Rhythmic traction of tongue 18 or 20 times a minute when no medicines are within reach.

2. In bronchial asthma the application of the high frequency interrupted current to the vagus, accessorius, phrenic, and sympathetic nerves produce an anæsthetic effect, relieve the breathing after a few minutes, and after several sittings often permanently terminate the asthma. The positive electrode should be placed on the lateral triangle of the neck or in the nose.

Hypodermic :—

1. Injection of morphia gr. $\frac{1}{4}$ is very efficacious.

N.B.—It is dangerous if there be much bronchial secretion

2. Injection of heroin hydroch. gr. $\frac{1}{30}$ dissolved in ten drops of distilled water, is very useful.

Spray inside the nostrils with the following :—

R.

Liq. adrenalin (1 in 1000)	℥, iv
Cocaine hydroch (1 per cent sol)	℥, iv

It relieves Bronchial spasm at once.

Locally :—

1. Mustard leaf poultice over the cardiac region in cardiac or renal asthma
2. Hot foot-bath relieves spasm and induces sleep.
3. Application of ice over the position of the Vagi nerves in the neck is said to relieve the attack. (*Byram Bramwell : M. D.*)

Internally :—

1. In spasmodic Asthma.

R.

Pot. Iodide	gr. x
Pot. Bromide	gr. x
Tinc. Lobelia Ætheris	m. xv

Or

Tinc. Stramonium	m. x
Spt. Etheris Co.	m. xx
Aq. Chloroformi	ad. ℥, i
Fiat Mixtura	

Sig.—Every 2 hours till spasm is relieved.

(b) R.

Dionin (Meck's)	gr. v
Aq laurocerasi	℥ ss

Dose.—10 drops 3 times daily, at bed time 20 drops.

2. In Cardiac Asthma.

(a) R.

Sodii Nitris	gr. v
Liq Strychnine hydro.	m iii
Spt: Etheris Nitrosi	m. xx
Spt. Etheris Co,	m. xx
Syr. Lemon	℥ ss
Aq : Chloroformi	ad, ℥. i

Fiat Mixtura : Sig,—one every 3 hour up to 4 doses,

(b) R.

Tinc: Strophanthus	℥. i
Nitro glycerine Sol.	m. viii
Liq: Strychnine hydroch	m. xxxvi
Paraldehyde	℥. iss
Inf. Calumba	℥. iss

Fiat mixtura : Sig :—a teaspoonful in an ounce of water,

3. In Gastric Asthma due to the abnormal amount of gas pressing on the heart.

R.

Bismuth Carb	gr. v
Sodii Bicarb	gr. x
Carbo ligni	gr. v
Oil menth Pip	m. ¼

Mft, for a pulv : To be given in a cachet every 3rd hour,

Solis-Cohen says that *aspidospermine* is an exceedingly useful remedy in all the "fifty-seven" varieties of asthma, He uses the crystalline alkaloid in from $\frac{1}{12}$ to $\frac{1}{2}$ grain doses.

11. The Prevention of the Spasm.

In Spasmodic Asthma.

(a) R.

Sodii Iodide	gr. iv
Liq: Sodii Arseniatis	m. ii
Tinct : Stramonium	m. x
Spt: Etheris Co.	m. xx
Aq. Chloroformi	ad, ℥. i

Fiat mixtura : Sig :—Thrice a day.

476 DISEASES OF THE RESPIRATORY SYSTEM.

(b) R.

Ammon Iodide	℥. ii
Ext : Grindeliæ liq:	℥. ss
Ext: Glycyrrhizæ liq.	℥. iv
Tinct: Lobelia	℥. iss
Tinct. Stramonium	℥. iss
Syr: Prunum Virginium	℥. iv

Fiat mixtura : Sig :—a teaspoonful in an ounce of water thrice a day.

2. In Cardiac Asthma due to the failure of the right ventricle.

(a) Caffeinæ Citras effervescence, a teaspoonful twice a day, is useful.

(b) Tabloid Trinitrine, gr, 1/100.

Sig :—one thrice a day.

(c) Camphor, strophanthus.

3. In Gastric Asthma

R.

Sodii sulpho carbolas	gr. iiii
Sodii Bicarb	gr. xv
Tinct : Assafetida	m. vii
Spt: Chloroform	m. x
Aq: ptycotis	ad. ℥. i

Fiat mixtura : Sig:—twice a day after meal.

4. In Renal Asthma

(a) Open the bowel by calomel, followed by saline purgative in the morning.

(b) Induce sweating by hot vapour bath

(c) Pilocarpine Nitras gr. 1/12 may be administered with caution.

5. In Asthma of Pregnancy.

Ext. Viburnum Prunifolium is an excellent palliative remedy

6. Nasal Asthma.—

Local application of liq : adrenalin (1 in 1000).

The mucous membrane is desensitized and so-called asthma-points—that is points on the mucous membrane which on pressure with the sound cause definite reflex expressions—are searched for.

iii. Remove the Cause.

Find the cause.—

Asthma is caused by “nervous irritation” either toxæmic or mechanical. It may serve as a mantle of ignorance to conceal some form of

- (i) *Autointoxication* (Kidneys, alimentary canal etc.), the asthmatic attack being due to a toxæmia affecting the vagus centre or pneumogastric trunk.

Hence all asthmatics must clear their digestive canals from toxins (*desintoxiquer leur tube digestif*) by means of a laxative saline in the morning taken in an infusion of violets, by a milk diet, lastly, by enemas of tepid water.

Later on the diet should be lacto-ovo-vegetarian by preference.

- (ii) *Mechanical irritation* (e. g. nasal polypus, passive hyperæmia in the lungs, insufficient heart's action etc.

Adapt your therapy to the cause. Remove the nasal polypus, cure the dilated stomach or the prolapsed bowel, tone up the heart's action, study the therapeutic indications of renal diseases and apply them *pro renata*, relieve gout, rheumatism and other disturbances of metabolism etc. The asthmatic condition will then take care of itself.

- 1 Asthma of pregnancy can not be cured until the birth of child.
- 2 Hay or cat Asthma can not be got rid of unless you remove the cause that is hay or cat.

The author reports a series of interesting cases in which he injected antidiphtheretic serum in ten cubic centimeter doses during an attack. He even permanently cured in ten days by three injections. Have you ever cured my friends, Asthma permanently? I have not. Radical 'Cure' in the truest sense of the term seems to me impossible.

Asthma and Tuberculosis:—

It is an interesting fact that persons suffering from asthma hardly ever contract tuberculosis due to passive congestion of lungs. This is nature's classical example which furnishes the therapeutic indication for Bier's hyperæmia in such a variety of conditions.

Climatic treatment —

The patient is the best judge of selecting his suitable atmosphere. Some patients feel comfortable in dry laterite soil, some prefer cool sea breeze while others hail balmy mountain air.

The patient should be in the open air as much as possible and not be imprisoned in the "Hot house" for fear of catching cold.

Hygienic treatment :—

1. Faradization of the vagus for ten minutes. This is a very effective remedy.
2. Percussion of some of the respiratory centres located in the spinal cord.
3. Kneipp's "walking in wet grass" enjoys a well-merited reputation
4. Respiratory gymnastics. The object is to prolong and intensify inspiration and to shorten expiration.

They fortify the bronchi and combat pulmonary insufficiency, reestablish the play of the inspiratory muscles and the permeability of the air-passages, perfect the expansion of the chest and the extension of the diaphragm, by increasing the demand for air,

5. Thermic shocks of heat and cold.

6. The judicious and regular use of cold baths to stimulate general vigour may prove of much benefit.

(*A system of Medicine by Osler and Mc. Cræ. Vol. iii. Page 720.*)

7. Light baths overcome the asthmatic bronchitis and in from twelve to fifteen days make the vesicular murmur to re-appear, which had been suppressed under the most sibilant and crackling rales. They remove the dyspnoea, restore the appetite and the sleep, which becomes regular perceptibly, in proportion as the bronchi are disencumbered.

Dietetic treatment:—

During fits of spasms the patient must be on low diet chiefly fermented milk and cocoanut water.

During a-spasmodic period he may take the following :—

- I. Animal food.
- II. Vegetable food.
- III. Beverages.

I. Animal food.

(a) Meat at midday.

N.B.—1 No brain, liver and kidneys which contain purin bodies which are transformed into uric acid.

- 2. No sauce.
- 3. No meat extract.

(b) Fresh water fish.

Avoid salt-water fish, crustacea and soft roe. (Minkowski),

(c) Eggs are allowed.

(d) Milk and foods prepared with milk are highly recommended. (*La Asthme*)

II. Vegetable food.

Rice, potato, oatmeal porridge, cornflour etc. are good.

Avoid cocoa and chocolate : they are the prolific source of uric acid basis (Armand Gautier).

III, Beverages

The ideal drink is pure water.

Avoid alcoholic bitters, liquor and wine (*Journal of Practical Dietetics, September, 1909.*)

Food should be plain, light and wholesome.

Remove all rocks of offense from the path of patient's pneumogastric. But, "if these things are done in the green tree," what is to be done in the dry? What chance has such a child of reaching old age?

The following is the ideal Menu of diet as sketched by the writer:—

7 A. M.—Milk with rusks, biscuits, dry toast and butter.

10 A. M.—Rice, a plate of meat, vegetables, soup, egg and fish.

1 P. M.—Milk 8 ounces.

4 P. M.—Fruits, egg, pomegranate, grapes &c.

7 P. M.—Bread curries, milk 8 ounces.

10 P. M.—Go to bed on an empty stomach.

Campbell in the Clinical Journal Jan. 5, 1910, sums up the whole of therapeutics in the aphorism:—

"Tend the mind and the nerves, correct the blood-plasma"

1. By tending the mind I mean influencing the patient mentally, by means of education congenial occupation, bright society, change of scene, suggestion and so forth.
2. By tending the nerves I mean the removal of any source of reflex irritation that may be present *e.g.* eye strain dental disease.
3. By correcting the blood plasma. I mean the remedying any defect that fluid may exhibit.

The mystery of the disease lies to a large extent hidden in the blood, the most complex and subtly endowed fluid in Nature.

482 DISEASES OF THE RESPIRATORY SYSTEM

Rabagliati (*Med. Press June 24, 1908*) looks upon asthma as a process by which nature eliminates unnecessary material from the body, and which therefore is to be met by anticipating nature's effort and reducing the intake.

Excess of carbonaceous food is the chief agent, but excess of any sort of food is harmful

Morning—a cup of weak tea

Noon—one meal.

5 P. M. a cup of weak tea

7 P. M.—a cup of Allen and Hanbury's food or Horlick's malted milk or maltine with milk.

N.B.—By means of this *regime*, most inveterate cases of asthma with emphysema can be put in abeyance for a considerable length of time

A person is asthmatic because he has asthmatic blood, a condition of blood, which acting on respiratory mucous membrane produces through nervous system the vascular tumescence.

Frances Hare believes that plasma contains an excess of carbonaceous material, a condition which he terms hyperæmia and the digestive tract constitutes a potent source of blood poisoning.

Hence the rational treatment is

(i) Regulation of diet.

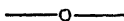
The quantity of starch, sugar and fat is curtailed and the patient is fed mainly on animal food.

(ii) Suitable muscular exercise.

Walking is best. Systematic massage, respiratory and other exercises are recommended.

Woods Hutchinson in his work "Common Diseases" holds that asthma results from an error in protein metabolism, associated with an excessive carbohydrate diet, the oxidation of the simple carbohydrate molecule interfering with the efficient oxidation of the complex protein molecule. The toxic products may arise within the tissues or in the

intestinal tract, and their development may according to the author, be successfully prevented by the following method. Three meals a day, at intervals of five hours, the last meal being light and not later than 7 P M. There must be thorough mastication, and no fluids are allowed with the meals, and all mixed cooking is prohibited. If the disease is severe, one day's fast except for buttermilk—per week is strongly urged, until the symptoms have subsided, and then a systematic fasting day once in three months is recommended. Respiratory and open-air exercises, oxygen inhalations, and strict attention to all the digestive functions, are also to be employed.



EMPHYSEMA.

Emphysema is a disease of the lungs characterised by overdistension of the alveoli, and atrophy of the alveolar wall; in the great majority of cases this over-distension is persistent and permanent. The chief physical Signs characteristic of emphysema are :—

1. Over-distended barrel-shaped Chest.
2. Peculiar character of the breathing.
3. Very slight expansion of the chest which occurs even under the powerful respiratory efforts.
4. Bulging above the clavicles with attended coughing.
5. Hyper-resonance on percussion.
6. Covering up of the cardiac area.
7. Downward displacement of heart, diaphragm, liver etc.
8. Feeble inspiration and prolonged expiration.
9. Sibilant and sonorous rales
10. Cyanosis.

484 DISEASES OF THE RESPIRATORY SYSTEM.

The classical symptoms are —

1. Shortness of breath on exertion
- 2 Dyspnœa.

Physician should bear in mind :—

- (i) Atrophy of the aveolar walls, destruction of the capillaries, and wasting of the elastic tissues are changes which can not be repaired.
- (ii) The relief of the secondary effects upon the heart and the circulation.
- (iii) Emphysematous patients are prone to bronchitis , it is therefore of utmost importance that all known causes of catarrh, inflammation, should be carefully avoided, emphysema is in many cases the result of bronchitis, asthma

There are two varieties of emphysema :—

Hypertrophic—the most common form

Atrophic :—a rare form due to senile change

Hence the rational plan of treatment would be first of all to allay bronchitis and to soothe cough.

The writer recommends the following

Internally :—

R.

Acid Hydrobromic (Dil)	m. x
Ext. Ipecac : liq :	m. ss
Inf : Digitalis	ʒ. i
Glycerine	m. x
Inf : Senegæ :	ad. ʒ i

Mft : for a dose : Sig : one every 4 hours.

Locally :—

R.

Lint : Ammonia
Lint: Saphonis Co:
Lint Terebinth Co: a a ʒ ii

Mixt : to be rubbed over chest, twice a day

If there be dyspnœa cyanosis etc.—

- (1) Oxygen inhalation
- (2) Bowels to be kept regulated and flatulency to be avoided.
- (3) Strychnine gr. 1/64 tabloid internally :

If the patient is Gouty, the regimen diet and therapeutic measures suitable for chronic gout should be employed

When the bronchitis is allayed arsenic iodide and nitrites are valuable remedies :

Writer's favourite formula

R_x

Sodii Iodide :	gr. v
Liq : Sodii arseniatis	m. ii
Tinc : Nucis Vomica	m. iv
Syr : prunum vibernum	ʒ. ss
Aq : chloroformi	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day with a tabloid of

Liq : Trinitrin, m 1.

To maintain general health and tone of heart muscle
Prof B. Bramwell recommends the following :—

R_x,

Liq : arsenic hydroch	ʒ. i
Liq : Strychnine hydroch	ʒ. ii
Acid hydrochloric (dil)	ʒ. ii
Liq : Pepticus (Renger's)	ad, ʒ. iv

Mft, dose a teaspoonful in water thrice a day after food

Dietetic treatment:—Diet should be plain and nutritious.

(Read my article on Asthma)

Hygienic treatment:—

Fresh air and mild exercise are beneficial . He should live in an equable climate :

PLEURISY.

In considering the treatment of pleurisy it is rational to follow the usual clinical division :—

i. *Acute.*

ii. *Chronic :*

i. **Acute Pleurisy.**

For practical treatment it is sub-divided into two forms:—

A. *Dry.*

B. *Moist.*

Treatment of the first or febrile period of the attack :—

Internally :—

Open bowels by mercurial purgative,

R,

Calomel	gr. iii
Sodii Bicarb	gr. x

Mft. for a pulv : Sig : at bed time :

An effervescent saline draught early in the morning :

i. R,

Tinc, Aconite	m. ii
Tinc, Bryonia alba	m. iv
Liq, Cinchonæ hydrobrom	m. v—x
Aq, Anisi	ad. ʒ ss

Mft. for a dose : Sig : every 4 hour upto 3 or 4 doses in a day.

2. If the pain be of a stabbing nature and very severe a dose of dover's powder at night is beneficial,

Hypodermically :—

Tabloid morphinæ hydrochloridi gr, $\frac{1}{4}$ is very efficacious to alleviate pain.

Locally :—

i. Strapping of the chest with long strips of adhesive plasters or belladonna plasters to limit the amount of movement.

2. Counter-irritation to the chest,

R.

Valsal Iodine 10 per cent,	3. iv
Oil Cajuput	ad. 3. ii

Mft, to be rubbed freely once or twice a day.

- 3 Warm fomentation over the chest,
- 4 Application of blister over the seat of pain followed by morphia dusting to relieve pain.
5. Apply thermofuge or antiphlogestine.. It should be applied to the chest wall, (front, sides and back) hot and thick ; then wrap up the part with oiled silk followed by a thick layer of absorbent cotton

It stimulates the action of phagocytes and arterial capillaries through its influence upon the peripheries of the nerves and secondly upon the nerve centres, to drive the accumulating tide through the engorged vessels, thus unloading them into the veins

6. Apply leeches on the very focus of pain.
7. Ice bag may be used as in Pneumonia but it is attended with danger.

Treatment of the second or post febrile period of the diseases:—

The panacea of our treatment is to initiate and facilitate the natural process of absorption

In uncomplicated cases of simple serofibrinous pleurisy, it is not usually prolonged beyond ten days or a fort-night.

In those cases therefore, in which the pyrexia persists beyond this period the presence of purulent exudation should be suspected.

Internally:—

1. Quinine salicylate gr. v. early in the morning.

2 If there be signs and symptoms of effusion, the following is the writer's favourite formula :—

℞	
Sodii Iodide	gr. iv
Ext. Apocyanum liq	m. x.
Mag. sulph.	ʒ. ii
Spt. Chloroform	m xv
Aq. Anisi	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day : Iodide absorbs fluid from the pleural cavity, while apocyanum is credited with the remark "Vegetable trocar." Mag. sulph removes the fluid by watery purgation.

In rheumatic pleurisy Prof : Hare recommends :—

℞	
Pot. Iodide	gr. v
Syr. Ferri Iodide	m. x-xx
Liq, Hydrarg et Arsenic Iodide.	m. v
Syr. Zingiberis	ʒ. i
Aq. Chloroformi	ad. ʒ. i

Mft. for a dose. Sig. one twice or thrice a day.

When heart is embarrassed by effused fluid Inf. Digitalis with other cardiac tonic and diuretic is recommended

℞	
Sodii Citras	gr. v
Liq. Strychnine hydroch	m. iii
Inf. Digitalis	ʒ. i
Dec. scoparia	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day.

5. Pilo-carpine is highly recommended by some authorities during the absorption (post febrile) period of the disease, but the physician should bear in mind about the fearful depression which it causes.

Locally :—

1. Hot pack. warm or vapour bath to induce free action of the skin.

Warm baths and tepid sponging are recommended because heat stimulates the activity of the skin, cold sponging is contraindicated.

(*Nothnagel's Encyclopedia of Practical Medicine. Disease of the lung. P. 909.*)

2. Paracentesis :—

1. Withdraw more or less effused fluid and inject a little adrenalin sol. to stimulate the absorption of effused fluid

3. Auto-Serotherapy —consists in withdrawing a syringe-ful of the pleuritic fluid and immediately injecting it under the skin. No local reaction or constitutional disturbance is produced, but the pleural effusion is rapidly absorbed. There is marked diuresis immediately after the injection.

(*Berl. Klin. Woch. Jan. 18, 1909.*)

4. Lung gymnastics, as advocated by Prof: Byrom Bramwell, the writer quotes the following lines from the *Clinical Studies* page 278 vol. ii.

“The method is to make the patient forcibly blow water from one vessel into another. The time required to empty the bottle should be carefully measured from time to time, and the patient should be encouraged to shorten it (*i. e.* to expire more forcibly) from day to day. This procedure tends to produce expansion of collapsed portions of lung and to facilitate the absorption of fluid by the veins and lymphatics in the pleural wall”.

ii. Chronic Pleurisy :—

At this stage absorption of fluid is delayed hence Iodide internally and mercurial ointment externally are recommended.

It is divided into—

(a) *Dry*

(b) *With effusion.*

(a) Chronic dry pleurisy generally leads to tuberculosis; hence the writer prescribes creasotal m.v. in milk and codliver oil a drachm, twice a day after meal to guard against the microbic invasion.

(b) Chronic pleurisy with effusion :—

We should not be in a hurry to withdraw fluid until we see that Nature is falling to do it by herself.

(*The Clinical Journal July 13, 1910.*)

Sir James Barr. in "*The Bradshaw Lecture*" *Brit. Medical Journal* November 9th 1907 remarks:—

"The effusion keeps the collapsed lung quiet, which is very desirable if there be any active tuberculosis of lung. A very large proportion of cases of pleurisy are tubercular, and the early withdrawal of fluid causes vascular turgescence of the lung, often hastens the dissemination of tubercle bacilli and kills the patient."

G. Dieulafoy, on the other hand, strongly advocates thoracentesis.

That well renowned French Physician in *the text book of Medicine 1910, Vol. i ; page 261* remarks :—

"Operation is imperative, and we must not forget that procrastination is an unfortunate formula which costs patients their lives."

1. Dr. Cooke (*N. Y. Med. Journal*) recommends proto-nuclein tablets gr iii (Reed and Carnrick) half an hour before meals and at bed time. Bowels to be opened with cascara and diet should be nourishing *viz.* lean beef or Mutton, vegetable and half a pint of cream daily. The result is very satisfactory, after 8 weeks of treatment the patient was declared cured.
2. Schnulgen (*British Medical Journal*) recommends Fibrolysin in pleural adhesions. He used Merck's preparation which contains 2.3 c.c. of fibrolysin and Sodium Salicylate in each capsule, and injected this dose either locally or in gluteal muscles. The injections were repeated once or twice every week.

3 The injection of air into the pleural cavity.

Sir James Barr has been a strong advocate of the principle of substituting air for the effusion; he states that this method, by allowing a slower expansion of the collapsed

lung, obviates the tendency to sudden congestion and œdema, and diminishes the risk of recurrence of the effusion.

(*System of Medicine by Allbutt and Rolleston Vol. V. Page 558.*)

4 Injection of Nitrogen gas into the pleural sac.

During Convalescence —

The following tonic is recommended.

R.

Ferri et Quininæ Citras	gr. x
Acid Nitromuriatic Dil	m. vii
Liq. Strychnine hydroch	m. ii
Spt Chloroform	m. x
Inf. Calumba	ad. ℥. i

Mft. for a dose. Sig. one thrice a day after meal.

Hygienic treatment —

- 1 Patient should be confined to bed.
- 2 Patient's surrounding should be pleasant and cheerful.
3. Room should be dry and well ventilated.
4. Strong mental suggestion is recommended

As soon as the fever subsides, the patient should be told that the inflammation is at an end and that convalescence is about to commence, Prof: B. Bramwell attaches great importance to the administration of such a mental tonic.

Dietetic treatment —

1. Milk.
2. Plasmon and milk.
3. Horlic's malted milk.
4. Soups.
- 5 The amount of fluid which the patient drinks should be restricted as much as possible.
6. Diet should be dry, and free from salt.

Prof; Osler states that he has seen large effusions disappear rapidly under a dry diet and full doses of epsom salts.

Diseases of the Genito-urinary System.

CHAPTER VII

ALBUMINURIA.

The name albuminuria is generally given to signify the presence of albumin in the urine.

Prof : Osler in *the Principles and Practice of Medicine* has remarked :—

“ The presence of albumin in the urine, formerly regarded as indicative of Bright’s disease, is now recognised as occurring under many circumstances without the existence of serious organic change in the kidney.

Albuminuria is either physiological or pathological. By the former it is understood that in apparently healthy persons albumin—usually small in quantity—is found in the urine, by the latter albumin is present due to diseased condition of any part of the urinary tract

The clinical significance of the presence of serum albumin is an indication of a fault in metabolism rather than an evidence of renal impairment.

It conveys a sentence of death to one not doomed to die. There are two varieties of albuminuria, viz :—

- i. Physiological.
- ii. Pathological.

i. Physiological or functional :—

“ Albuminuria in the apparently healthy ” is met with in 4 conditions.

1. "EXERTION ALBUMINURIA"—The albuminuria dependent on "muscular exertion" is very common. It occurs in the healthiest and strongest. The chief factor in the production of this form is the prolonged muscular contraction and consequent rise of blood pressure.
2. NEUROTIC ALBUMINURIA.—Of this form our knowledge is less precise. There is some evidence that transient and slight albuminuria may follow prolonged overwork and mental strain or anxiety. The transient albuminuria which has been noted in exophthalmic goitre may, possibly, come under this head
3. "DIETETIC ALBUMINURIA"—Comprises cases in which a slight transient albuminuria is apparently induced either
 - (i) By the ingestion of large quantities of protied material, such as cheese and eggs, or,
 - (ii) By the taking of food of any kind.
4. "POSTURAL ALBUMINURIA"—To this class most instances of albuminuria in the apparently healthy belong. It is spoken of as "postural" because it is largely influenced by the position of the body. It is also called "cyclic" from the fact that the daily appearance of albumin shows a certain definite rhythm or periodicity. It probably also includes the majority of cases which have been termed "albuminuria of adolescents." It is most commonly met with in young people. It is not present in the urine passed immediately on rising in the morning. It is present in the after-breakfast specimen. It may not be found again in the course of the day, but in many cases it is present after the midday meal. It is nearly always absent in the evening, when the day's work is done.

The albumin is always small in amount.

ii. Pathological:—

1. Congestive . —

A. *Active*:—(i) Cold.

(ii) Chill.

(iii) Toxic substances which irritate kidney *e.g.* alcohol, lead, turpentine.(iv) Infectious disease *e.g.* diphtheria, cholera, scarlet fever.(v) Nervous storm *e.g.* epilepsy, disease of spinal cord.B. *Passive*: (i) Heart disease.

(ii) Lung disease.

(iii) Pregnancy.

(iv) Ascites.

(v) Debility after fever.

2. Inflammatory *i.e.* albuminuria of renal origin *e.g.* nephritis in all its form.3. Morbid changes in blood *e.g.* scurvy, purpura, hæmophilia.4. New growths *e.g.* cancer, syphilis, tuberculosis5. Degeneration *e.g.* lardaceous disease.

N. B.—Prof : Nestor Tirard (*Lancet* Oct. 9, 1909.)
remarks :—

“Albumin is merely an indication of an abnormal condition : it is not a disease. Numerous other signs and symptoms must be carefully weighed, perhaps at short intervals, before it is justifiable to express more than a provisional diagnosis.”

Theories of albuminuria :—

There are four current views of this disease. viz :—

1. Hæmatogenous.

2. Parenchymatous.

3. Vascular.

4. Metabolic disturbances.

1. Hæmatogenous theory .—

It is due to alteration of alkalinity and salts of blood

Albuminoid proteid becomes more easily diffusible and excretes in the urine as albumin. It occurs in scurvy, purpura etc ,

2. Parenchymatous theory :—

It is due to some changes in the lining epithelium of glomeruli :

- (a) Epithelium of glomeruli has been degenerated, and therefore allows albumin to escape.
- (b) Degenerated epithelium having been shed, the basement membrane which remains in tact, allows albumin to escape.
- (c) Senator of Berne's view : degenerated epithelium contains albumin in it and is the source of albumin in urine. It occurs in inflammatory disease of kidney.

3. Vascular theory —

It is due to alteration of blood pressure. The lower the arterial blood pressure, the greater the albumin in urine, and inversely when the blood pressure increases the albumin in urine diminishes.

It occurs in heart disease, lung diseases etc.

4. Metabolic disturbances :

Treatment .

Remove the cause if possible, put the patient to bed and feed him on bland diet.

In the cases of exertion albuminuria of neurotic and dietetic albuminuria and of the form dependent on cold bathing, the apparent cause can be removed. In the far more common case of postural albuminuria there is no indication for special treatment.

N.B.—Dr. Dukes recognises three classes of functional albuminuria as follows ;—

1. One class is characterised by a raised arterial tension.
Treatment—reduce protein from diet and purge occasionally by blue pill.

2. In the second class, pulse is large and soft, extremities chilly, the heart large and chilblains common.

Treatment—full diet with strychnine and arsenic.

3. In the third class arterial tension varies, patients are neurotic and sparely built.

Treatment—Bromides and occasionally blue pill.

The writer's favourite formula in cases of functional albuminuria :—

R

Calci carb præcip	℥. i
Acid lactic B. P.	m 130
Inf : Digitalis	℥. iss
Inf : Buchu	ad. ℥. vi

Mft · Divide it into 12 marks : Sig : one thrice a day in water.

One mark or one tablespoonful contains 15 grains of calcium lactate).

BRIGHT'S DISEASE.

Bright's Disease is a diffuse specific nephritis characterised by albuminuria, casts, etc.

The disease may be *clinically* divided into two groups, *viz* :—

1. Acute Bright's Disease.
2. Chronic Bright's Disease.

It is certain, heredity is a potent factor in the production of nephritis. Mental depression and nervous exhaustion are the predisposing causes of this disease.

1. Acute Bright's Disease is an acute diffuse nephritis due to the action of cold or toxic agents upon the kidneys.
2. Chronic Bright's Disease is a chronic nephritis.

Clinically two groups are recognised :—

- (1) *Chronic Tubal or Parenchymatous Nephritis* is characterised by marked dropsy, large amount of albumin, high specific gravity, scanty urine and *post mortem* by the *large white kidney*. In the latter stages of this process the kidney may be smaller—a condition known as the *small white kidney*.
- (11) *Chronic Granular or Contracted or Interstitial Nephritis* is characterised by absence of dropsy, trace of albumin, low specific gravity, polyuria, and later, renal fibrosis and secondary cardiovascular changes *viz.*, hypertrophy of the heart and thickening of the arteries, are established.

Classical Symptoms of Acute Bright's Disease —

1. Puffiness of face.
2. High coloured scanty urine which contains albumin, blood and tube-casts
3. Dull pain on the loins.
4. Vomiting may be present.
5. Temperature is high generally in children.
6. Subsequently hardness of pulse and general anasarca ensue.
7. In later stages dropsy and anæmia are well marked. The visible characters to the disease—the bloated pallor and the water-logged carcass—are very characteristic.

Classical Symptoms of Chronic Parenchymatous Nephritis :—

Following an acute nephritis, the disease may present in a modified way, the symptoms of that affection : in many cases it sets in insidiously.

1. Symptoms of acute Bright's disease.
2. Uræmic symptoms are common, though convulsions are less frequent than interstitial nephritides.
3. Cardio-vascular changes are less common.

Heart may be hypertrophied, though there are instances in which the heart is not enlarged.

The tension of pulse is usually increased.

4. Retinal change is less frequent than in chronic interstitial nephritis.

5. Gastro-intestinal symptoms are common.

Uræmia is the common termination.

Uræmia may be defined as a toxic condition arising usually in cases of acute or chronic renal disease. It is allied to other toxic states, such as acetonæmia and cholæmia,

There are two forms of Uræmia—Acute and Chronic.

Acute Uræmia :—

Prodromata are :—

1. Headache especially occipital.
2. Nervous complaints :—
 - (a) Cramps in legs.
 - (b) Numbness or tingling in limbs.
 - (c) Paralysis.
 - (d) Uræmic amaurosis (blindness).
 - (e) Deafness.
3. Fœtor in breath
4. A foul tongue.
5. Loss of appetite.
6. Drowsiness.
7. Itching of skin is the result of natural excretion of urea through sweat glands.
8. Pulse slow.
9. Temperature subnormal.

Symptoms are :—

1. Clonic convulsion ; muscles are alternately relaxing and contracting.

2. Unconsciousness.
3. Expiration ends in a peculiar whistling noise whereas in apoplexy the breathing is stertorous
4. Coma supervenes.

Chronic Uræmia.

Clinically two forms are noted—

- (i) Asthmatic.
- (ii) Dyspeptic

1. Asthmatic Uræmia.

Uræmic dyspnœa is classified by Palmer Haward as follows:—

- (a) Continuous dyspnœa.
- (b) Paroxysmal dyspnœa.
- (c) Both types alternating.
- (d) Cheyne-strokes breathing.

The attacks of dyspnœa are nocturnal ; the patient generally sits up in bed ; it is called in popular language 'renal asthma.'

Cheyne-Strokes breathing .—

Instead of the ordinary inspiration and expiration occurring with regularity there are alternate periods of apnœa (during which the breathing fades away to nothing) and dyspnœa (during which the breathing becomes extremely marked). The term 'Cheyne-strokes breathing' is called after two Dublin Physicians—Dr. Cheyne and Dr. Stokes.

Blood pressure is best measured by Martin-Riva-Rocci-instrument.

During period of Apnœa 230.

During period of Dyspnœa 240.

ii. Dyspeptic Uræmia.

- (a) Vomiting of cerebral type.
- (b) Hiccup.
- (c) Diarrhœa profuse with ammoniacal smell.

Theories of Uræmia:—

1. Retention of, or intoxication by
 - (a) Urine as a whole ,
 - (b) Keratinin ;
 - (c) Carbonate of Ammonia ;
 - (d) Potassium Salts ;
 - (e) Chlorides.
2. Anæmia of the Brain (Traube's theory)—
 - (a) Dependent on œdema brought about by the spasms of vessels of certain cerebral areas :
 - (b) Dependent on a poison ,
3. Due to high arterial tension.

Chronic Interstitial or Granular Nephritis.—

The pathology is an overgrowth of the interstitial, inter-tubular or fibroid tissue as the result of a slow process akin to inflammation.

The overgrowth is succeeded by contraction and the compression of the tubes and malpighian bodies to their gradual atrophy and partial extinction.

There may be no symptoms whatever to suggest to the patient the existence of a serious malady.

The only safe rule is to examine urine carefully in every case.

The writer quotes the language of Sir William Gull :

“What can a doctor know about a man, if he knows nothing about his urine.?”

The classical symptoms.—

1. Urine of low specific gravity, occasional hyaline or granular cast, polyuria and mere trace of albumin.
2. Dropsy is usually absent.
3. Dyspnœa, *i.e.*, breathless on exertion.

4. Pulse of increased tension, hard and incompressible, due to "in the arterial side of the vascular system, resistance in front and increased pressure behind."—*Sir H. W. Broadbent.*

5. Heart is affected ; hypertrophy of left ventricle ; the second sound at the aortic area is ringing in character and is accentuated,—a very characteristic sign of increased tension. The apex beat of the heart is dislocated to the left.

6. Severe vomiting or diarrhœa may be the first sign.

7. Mental condition associated with Bright's disease :—

Renal cirrhosis is frequently associated with adhesion and thickening of the dura mater. The pia mater is also apt to be thickened and opaque, and in some instances adherent to the cortex cerebri. When this is the case the lymphatic or vascular circulation is so impaired that symptoms of cerebral and mental degeneration appear.

Renal disease, therefore is associated with insanity in two ways :—

(i) Acute transient, delirious mania, an acute toxæmia, or uræmic insanity.

(ii) A progressive cerebral degeneration, with chronic renal disease as the primary cause. (*Special Bright's Disease Number, Practitioner November 1901*).

8. Cerebral apoplexy, epistaxis, retinal hæmorrhage, etc.

High blood pressure for a considerable length of time tends arterioles of the brain, nose, etc., to become diseased ; a condition of periarteritis is apt to be developed and minute miliary aneurisms are apt to form on these arterioles. The rupture of these minute aneurisms is the cause of epistaxis, cerebral hæmorrhage, etc.

9. Albuminuric retinitis is a complication during the late stage of the disease.

The cardinal symptom is sudden dimness of vision.

10. Eczema is a common accompaniment,

- 11 In later stages when the heart fails, the quantity of Albumin may be greatly increased.

“ Acute uræmia is perhaps the most typical mode of termination of this form of Bright’s disease.” (J. BEADFORD in *Practitioner November 1901. page 518.*)

Physician should keep in mind three points regarding the treatment of this grave malady, *viz* :—

- (i) Medical ,
- (ii) Dietetic ,
- (iii) Hygienic ;

Medical Treatment of Acute Bright’s Disease :—

Remember the following golden rules :—

1. To abate renal hyperæmia ,
2. To avoid renal irritants (cantharides should not be put on any part of the body, for it is absorbed and excreted by the kidney) ,
3. To give physiological rest to the kidneys without irritating the gland .

(A) By maintaining an abundant flow through the tubes.

Distilled water, barley water, lemonade, are recommended for this purpose.

The following indigenous decoction is worthy of a trial, *viz* :—

Decoction of white “punarnava” (*Borhaavia Diffusa*) an old “mula” (*Raphanus Sativas*—Garden Radish), twice a day.

N.B.—Powerful diuretics must harm the kidney and therefore they should not be given.”—HALE WHITE of *Guy’s Hospital*.

The writer recommends the following formulæ:—

R	
Liq. ammon citratis	3 ij
Pot Citras	gr. x
Sodii Citras :	gr. v
Inf. Digitalis	3. i
Inf. Buchu	ad. 3. i

Mft. for a dose, Sig : one four times a day.

N.B.—Digitalis is employed without risk when the arterial tension is low and the cardiac impulse is not forcible.

The advantages of this mixture are :—

- (a) it is a mild blood diuretic.
- (b) it keeps the urine alkaline.

Fatty casts will, owing to the formation of soaps, come away more readily when the urine is alkaline.

(B) By keeping the skin active.—

- (1) Keep the patient in a warm bed, in a warm room.

There is nothing better for keeping the skin at an uniform warm temperature than bed, and in Acute Bright's Disease the natural relationship between the skin and the kidneys is particularly delicate, and even a slight cooling of the skin may greatly increase the renal disease.

The stay in bed should be absolute until a week after the albumin has disappeared.

Another reason for keeping the patient in bed is that Acute Bright's disease is a febrile disorder.

The temperature of the sick room should be constantly at 65°F.

(ii) The flow of sweat can be much increased—

- (a) by hot drinks, hot soda, hot lemonade ,
- (b) by hot bath ;
- (c) by hot air bath ; (the usual duration of a hot bath is 15 minutes.)
- (d) by wet pack ,

The patient is wrapped in a sheet which has been wrung out in warm water and over which several blankets are wrapped. After 20 minutes the sheet is removed, and the patient dried, and then he is wrapped in more hot blankets.

- (e) by subcutaneous injection of pilocarpinæ nitras
gr. 1/10.

(C) By keeping the bowels free.

The following are recommended :—

- (a) Occasional dose of mercurial purge or compound jalap powder or compound scammony powder to be given at night.
- (b) Sulphate of Magnesium and Soda in the morning as follows,

℞	
Mag Sulph.	℥. ijs
Sodii Sulph	℥. ijs
Glycerine	m. x
Aq. Aurantii Floris	ad. ℥. i

Mft. for a dose.

Treat the patient symptomatically .—

1. Œdema of legs :—

(a) Horizontal posture must be strictly maintained when the legs are affected.

(b) Periodical local hot air baths are good.

N.B.—Puncture of the legs should be avoided,

2. Sleeplessness :—

Chloral Amide, grains 20, is best.

N.B.—Avoid Sulphonal, Trional and Tetronal as they lead to hæmato-porphynuria. (*Hale White*). Avoid opium.

3. Anæmia :—

Organic preparation of Iron is good.

It should not be given until the acute symptoms have subsided.

4. Suppression of urine.

(a) Dry cupping on the loin.

(b) Hot fomentation with bran poultices.

Dietetic Treatment of Acute Bright's Disease:—

- 1. Milk is the staple food ; it is milk and nothing but milk in some form that should be the standard diet.

The advantages are :—

(a) it does not irritate the kidneys ;

(b) it is particularly suitable for fevers ;

- (c) it is easily digestible ;
- (d) it washes out the renal tubules and so get rid of all the epithelial *debris* that blocks them.

Butter milk is good. An exclusive milk diet, as some authorities demand, is not necessary nor can it be strictly enforced in most cases.—

(*Nathmagel's Encyclopedia of Practical Medicine, Kidney and Spleen : Page 204*).

2. Carbohydrates, when given in fever, save the tissues of the body (*May's Experiment*) hence gruels made of arrowroot or oatmeal, barley water, are recommended.

N.B.—Avoid meat, alcohol, opium, too much water, salt and salted food.

Prof Von Noorden remarks that copious water-drinking should be avoided in acute and sub-acute nephritis—conditions in which the kidneys require as much rest as can be obtained with safety to the rest of the body.

As convalescence is established, bread and butter, issin-glass, pudding of Chinese grass flavoured with rose water and black pepper, and fruits *eg.*, grapes, oranges, pomegranates, are allowed.

The writer recommends the following indigenous diet:—

Equal parts of fried reddish “Atap” rice and black “Til,” to be made into a ball with a little honey, and to be taken with reddish “ram” plantain or “katali” plantain, twice a day morning and evening.

Medical treatment of Parenchymatous Nephritis.—

Essentially the same treatment should be carried out as in Acute Bright's Disease. It frequently results from an uncured acute attack.

The most striking thing is the extent of the effusion of fluid into the connective tissue and the serous cavities of the body.

Writer's favourite formula :

1. R

Ferri et Ammon Citras	ʒ. i
Liq. Ammon, Citratis	ʒ. ii
Ext. Apocyanum liq.	ʒ. ii
Liq. Strychnine Hydroch	m. xxiv
Glycerine	ʒ. vi
Aq. Distil	ad. ʒ. viii

Mft. Put 12 marks. Sig : one thrice a day.

2. If there be tinge of malaria :—

R

Ferri et Quinine cum Strychnine	
Citras	ʒ. i
Liq. Ammon Citras	ʒ. ii
Ext. Apocyanum liq	ʒ. ii
Glycerine	ʒ. vi
Aq. Distil	ad. ʒ. viii

Mft. Put 12 marks Sig. one thrice a day,

3. R

Stronchium lactate	gr. iij
Tannalbin	gr. iiii
Ferratin	gr. iss
Ext. Lupuli	gr. iii

Mft, for a pill. Divide it into two pillets. Sig. two thrice a day.

Stronchium lactate lowers blood pressure, does not cause renal irritation and causes diuresis by dilating the blood-vessels of the kidney ; usual dose being 5 to 30 grains.

4. If Nephritis be of a hæmorrhagic type.

Methylene blue gr. ii in pill form twice a day, acts well

5. If anæmia be a marked symptom, prescribe iron in the shape of *albuminate of iron* :

e g. (a) Feralboid : dose being 1/6-1/3 gr.

(b) Ferratin : dose being 1-2 gr.

(c) Liq : Hæmo-Ferrum : dose being one drachm.

(d) Homell's Hæmatogen ; dose a teaspoonful,

- (e) Vin de Hæmoglobin : dose a teaspoonful
 (f) Iron Somatose : dose a dessertspoonful
 (g) Pepto fer : dose a teaspoonful.

6. If dropsy be acute, use any of the following :—

- (a) Diuretin : usual dose 5 to 15 grs. dissolved in milk.

The writer recommends the following formulæ :—

R

Diuretin	gr. x. v
Caffeinæ Citras	gr. i. i

Mft. for a pulv : to be given in cachet. Sig. one every 6 hours.

- (b) Theocin-Sodii Acetate—usual dose is 4 grs. in solution and to be taken after meal. It is sold in the market by the name of "Theocinoid" Tablet.

Writer's favourite formula ,—

R

Theocin Sodii acetas	gr. iv
Caffeinæ citras	gr. ii
Ammon benzoas	gr. v
Dec. Scoparii	ad. ʒ. j.

Mft. for dose : Sig : one every six hours.

- (c) Agurin—usual dose 15 grs. It is less powerful than Theocin Sodii Acetate, but more lasting in its action ; it is best given in cachet. "Agurin" Tablets can be had.

(d) R

Tinc. Ferri Perchloride	m. x
Mag. Sulph.	ʒ. i
Inf. Digitalis	ʒ. i
Aq. Chloroformi	ad. ʒ. ss

Mft. for a dose. Sig. one every half hour.

In the Carlsbad Congress for International Medicine PROF. VON NOORDEN has remarked :—

1. The first point is the prohibition of red meat as contrasted with white for which he can find no scientific

basis, and he points out that the highest creatin values are in the white meat of chicken and rabbit. He thinks if the quantity is duly regulated any kind of meat may be allowed.

2. The second point is the routine prescription of large quantities of milk, mineral water &c., with the object of "flushing the kidneys" and promoting the elimination of urea. $1\frac{1}{4}$ to $1\frac{1}{2}$ litres of fluid per diem is allowed, while large quantities of fluid (3 to 4 litres) overload the heart and lead to its dilation.
3. The third point is to preserve the heart's vigour by Nanheim baths and exercises.

Dietetic treatment of Tubal Nephritis —

The diet of sufferers from this disease is frequently misunderstood, for they are kept too rigorously to milk.

The disadvantages according to James Anders, *Philadelphia County Medical Society, November 1902*, are two-fold :—

1. Undue general weakness is prone to result from long continued restriction to milk.
2. Ingestion of massive quantities of fluid by overfilling the blood vessels, increases markedly the blood pressure.

Per contra the writer is in favour of the use of an abundance of milk within the bounds of safety to the cardiovascular system. Hence a mixed diet of Carbohydrates with milk is best.

The following is an ideal menu of diet as sketched by the writer :—

6 A. M.—3 ozs. of mineral water with equal quantity of hot water to be taken by sips, or the following formula :—

R

Mag. Sulph,	ʒ. ij
Sodii Sulph.	ʒ. ij
Glycerine	m. xv
Aq. Aurantii Floris	ad. ʒ. i

Mft. for a dose.

8 A.M.—Milk or debuttered milk 6 oz.

10 A.M.—Washed bread pap and milk, or

Powder 'man' and milk, or

Flour of 'panifal' and milk, or

'Khai' (fried paddy) and milk, or

"Banana" powder and milk, or

"Soti" powder and milk.

A dose of Iron preparation.

12 NOON—Debuttered milk, 8 oz.

2 P.M. Fruit juices, *e. g.* pomegranate, grapes, etc.

4 P.M.—Agar agar pudding of milk flavoured with rose water and pulv. black pepper.

6 P.M.—Plasmon and milk, or

'Soje' and milk, or

Sago and milk.

8 P.M.—A glass of milk.

Avoid common salt, too much water and meat.

Medical Treatment of Ch. Interstitial Nephritis :—

The disease is not to be cured, nor has any tendency to recovery.

The principle of treatment should be :—

1. To modify the circumstances and habits of the patient and to minimise the work of the irritated gland.
2. To prevent the accumulation in the blood of retained excrementitious products.

Diuretics are not indicated as Nature is producing diuresis the patient is passing more water than normal.

The following methods are recommended :—

(i) Purgation :—

(a) Pulv. Jalapæ Co. gr. xxx at bed time and a good dose of Mag. Sulph in the morning.

(b) ℞

Sodii Pot. Tartaras.

Pot. Acetas

aa. ʒ. i

Dose : a dessert spoonful in hot water early in the morning.

- (c) "Imperial Drink." It consists of a drachm of Acid Potassium Tartarate, a grain of Saccharine and three minims of Oil of Lemon to a pint of boiling water. It should be drunk cold.
- (ii) Diaphoresis, *e.g.* —
 - (a) Warm bath.
 - (b) Vapour bath.
 - (c) Hypodermic Injection of Pilocarpine nitras gr. 1/6.
- 3. To reduce blood pressure :
 - (a) Venesection.
 - (b) Purgation as mentioned above.
 - (c) Nitritis, *e.g.*, Nitrite of Sodium or Nitro-Glycerine internally, Amyl Nitras inhalation.

RINGER speaks very strongly in favour of the use of large doses of Iodide of Potassium.

American physicians recommend Chloride of Gold and Sodium.

DR. WEST (*Granular Kidney p. 161-162*) recommends small doses of Nitrate of Pilocarpine by the mouth twice or thrice a day.

Treat the Patient Symptomatically —

1. Head-ache.

- (a) Nitro-Glycerine Tabloid.
- (b) Solution of Trinitrine (1 in 100).
- (c) Nitrite of Sodium.
- (d) DR. BRADBURY advocates the use of Erythrol Tetranitrate.
- (e) Caffeinæ Citras.

The patient should, if possible, be kept in a quiet dark room, but previous to this a hot bath should be given. Caffeine may be advantageously combined with some Nitro-Glycerine (*Prof. Hale White.*)

- (f) When headache is associated with pain of a neuralgic character, PROF. NESTOR TIRARD recommends Antipyrine and Antifibrin.

2. Sleeplessness :—

Hot foot bath just before going to bed and wrapping the feet in warm blankets so as to further maintain the freedom of circulation are recommended.

(a) R

Chloral Amide	gr. xv. xx
Vini Gallici	℥. i
Aq. Aurantii Flor.	℥. i

Mft. for a dose. Sig. to be taken an hour before bed time

(b)

R

Sulphonal	gr. x
Trional	gr. x
Vini Gallici	m. xx
Hot Soup	ad. ℥. i

Mft. for a dose : Sig. to be taken before retiring.

3. Dyspepsia :—

R

Glycerine Acid Pepsin	℥. j
Acid Hydrocyanic (Dil)	m. i
Aq. Carui.	ad. ℥. i

Mft. for a dose : Sig. one twice a day after meal

4. Vertigo of Arterio-Sclerosis.—

DR. CHURCH, in *Medical Record*, June 11, 1892, recommends Pot. Iodide.

5 Cardiac debility :—

R

Caffeinæ Citras	gr. i
Pulv. Digitalis	gr. $\frac{1}{4}$
Ext. Nucis Vomica	gr. $\frac{1}{4}$

Mft. for a pill. Sig. one thrice a day.

6 If Cardiac Tonic is required—

a tabloid of Trinitrine and a tabloid of Tinc. Strophanthus m. v to be taken thrice a day.

7 If blood tension is high :—

- (a) A tabloid of Nitro-Glycerine thrice a day
- (b) Pot. Iodide gr. x thrice a day.
- (c) Erythrol Tetranitrate.

8. If hæmorrhage happen:—

The mere hæmorrhage is of itself rarely dangerous : indeed, it is often beneficial in so far as it lowers blood pressure.

Remember the following golden rules :—

- (a) Keep the patient quiet.
- (b) Open bowels by pulv Jalap Co., followed by Mag. Sulph.
- (c) The head of the patient should be raised.

N. B.—Ergot in particular should be avoided as it raises the blood pressure.

9. Uræmia:—

Physician should stamp in his mind the following points :—

- (i) To lower the blood pressure by
 - (a) Venesection.
 - (b) Epistaxis, a Nature's method of lowering blood pressure : it is, so to speak, a safety valve, and it will do the patient good rather than harm.
 - (c) Free watery purgation.
 - (d) Lumbar puncture or even trephining. (*B. Bramwell.*)
- (ii) To evacuate the uræmia-producing poison from the system by
 - (a) Purgation.
 - (b) Diaphoresis.
- (iii) To palliate the symptoms by appropriate remedies e.g. uræmic convulsion, renal asthma, etc.

Uræmic Convulsion:—

1. Prompt purging and sweating must be had recourse to.
2. Venesection if pulse be hard.

3. If convulsion be very violent :—

- (a) Inhalation of chloroform.
- (b) Inhalation of oxygen.
- (c) Chloral Hydras and Bromide by mouth or rectum

N. B.—Avoid opium and its derivatives.

It was STEPHEN MACKENZIE who advocated the use of Morphine in Uræmic Convulsion Professor OSLER speaks highly of its use “in the dyspnœa of Cheyne-Stokes breathing of advanced arterio-sclerosis with Chronic-Uræmia.”

Renal Asthma —

Physician has to keep in mind two points, *vis* :—

1. The immediate relief of the spasm by—

- (a) Vaso-dilators, *e.g.*, inhalation of Nitrite of Amyl, or Nitro-Glycerine internally :
- (b) Stimulants either ethereal or alcoholic.

2. The mitigation of the uræmia as early as possible, *i.e.*, to purify the blood and at the same time reduce arterial tensions by—

- (a) Purging, *e.g.*, elatrium :
- (b) Sweating. *e.g.*, air bath pilocarpine.

N. B.—Wet cupping over the loins is a remedy of undoubted value, but dry cupping and poulticing the lumbar region are both equally useless—*Caiger in Special Bright's Disease Number, Nov. 1901. page 537.*

Uræmia of Acute Nephritis :—to be treated by sub cutaneous injections of saline solution.

In the treatment of Uræmia BROWN-SEQUARD recommends renal extracts.

“Recently Urethane in full doses of 30 grains, dissolved in an ounce of chloroform water, and repeated every few hours for several doses, has met with some favour as a sedative in Acute Uræmia.

(*Burney Yeo's Manual of Medicine Vol. II Page 219.*)

Physician must steer a middle course between flooding the organism with Albumin and withholding it altogether.

As Senator well says, the physician should adapt his dietetic and hygienic prescriptions to the various phases of the disease and the individual conditions of each case

By such anti uræmic treatment the attacks can often be held at bay with long intervals of peace until the patient finds leisure to die quietly in some other way. Remember also that uræmia threatens on one side, while anæmia is to be feared on the other

Dietetic Treatment of Granular Kidney —

Put the patient on a diet which does not throw a strain on the kidney, *e.g.*, milk, milk food, bread, oatmeal porridge, well cooked tender vegetables and properly cooked fruits ; eggs in moderation are allowed ; avoid alcohol, meat white and red : (Read Professor VON NOORDEN'S remark about meat.) Nitrogenous food, which supplies the bulk of the renal excreta, should be reduced to the lowest amount compatible with health

DR. F. M. THORNHILL emphasises the fact, not too well known, that the ability of the kidneys to eliminate poisons is greatly reduced in the various forms of Bright's Disease, though it is not often a cause of death. A man can live so long as there is left in him the equivalent of two-thirds of one kidney. But when degeneration of the kidneys has gone so far that the amount of kidney tissues is reduced to less than this the patient dies from the accumulation of poisons in his blood and tissues. From these facts it is evident that foods which contain urea or uric acid, and foods which give rise to these excretory substances, should be carefully eliminated from the dietary of persons suffering from Bright's Disease. By this means the kidney collapse is postponed. DR. THORNHILL advises the entire disuse of meat of every sort, also eggs, and recommends a diet consisting of cereals, fruits, fresh vege-

tables, with milk and cream. It may be added that butter-milk is in such cases in every way preferable to ordinary milk.

J. E. FERRAN (*Journal of American Medical Association* February 20, 1897) recommends an exclusive fish diet especially those containing most iodine.

The following is the writer's ideal menu of diet :—

6 A.M.—A glass of mineral water 3 to 4 ozs.

8 A.M.—Oatmeal porridge and milk or fresh juice of palm tree.

10 A.M.—Rice or bread pap.

Fish stew and milk.

12 NOON.—A glass of cocoanut water.

2 P.M.—Debuttered or fermented milk 8 ozs.

4 P.M.—Fruits *e.g.* pomegranate, orange.

7 P.M.—Thin 'Soji' bread, vegetables and milk.

Diet plays an important part in the role of Bright's Disease:—

The writer cannot help quoting the advices of DR. W. B. WARINGTON appeared in the *Practitioner* Aug. 1909.

The principles of treatment are three in number which the physician should stamp in his mind, *viz*:—

- (i) to protect and rest the renal tissue
- (ii) to relieve and sustain the heart.
- (iii) to keep up the vitality of the patient

The author classifies diet as follows :—

- 1 The amount of fluid,
2. The pure milk diet..
3. The lacto-vegetarian diet.
4. The chloride-poor diet.
5. The nitrogen poor diet.
6. Special articles of diet.

1. The amount of fluid must be restricted to as little as possible, water increases œdema, hydræmia and work of the heart.
2. Milk is the chief article of food.

Its advantages are : —

It is a complete food, easily digested and does not cause alimentary fermentation, except perhaps lactic-acid fermentation ; it favours diuresis on account of its water, certain of its salts and its lactose, it is relatively poor in sodium chloride.

Its disadvantages are :—

It contains excess of proteid and fat which the patient cannot digest, it is poor in iron and its prolonged use causes great distaste for food.

3. Add to the milk food stuffs which are poor in Sodium Chloride and proteid, but rich in Carbohydrates, *e. g.*, rice, arrowroot, sago, etc
4. Sodium Chloride is necessary to animal life, and the body tissues are bathed in a fluid which contains about 5 per cent. of Sodium Chloride.

In health the renal activity maintains the level, while in Acute Bright's Disease the equilibrium is disturbed.

Maries hypothesis.—

There is a *cholure fixe*, in which the Sodium Chloride is chemically fixed by the tissues themselves. It occurs in the primary stages of œdema, and may persist even after the occurrence of a diuresis ; but when the tissues become saturated, the Chlorides accumulate in the tissue fluid and œdema follows this is the *cholure libre*.

5. Nitrogen poor diet.

According to VON NOORDEN the *nitrogenous bodies*—urea and kreatinin—are excreted with difficulty in parenchymatous nephritis, while *purin bodies*—uric acid, xanthin bases and ammonia—are well excreted.

N.B —Kreatinin is present in meat extracts, broths &c.

6. Special articles of food :—

Games and eggs may be allowed with caution, strong broths, extractives and alcohol are forbidden. Coffee, tea, tobacco are irritants; spices, pepper, ginger and mustard are harmful.

Hygienic Treatment of Bright's Disease.—

The great thing to aim at is warm equable climate.

The *desiderata* are warmth, dryness of air and equability of temperature.

Static electricity reduces the inflammation, equalizes the capillary circulation, absorbs exudation, opens up the uriniferous tubes and glomeruli and the effect in many of these cases as truly wonderful.

(*American Journal of Clinical Medicine*, April 1910)

Juettner, in his "*Modern Physiotherapy*" says :

"It is only by vibration that the forces of nature become manifest. Organic function is vibration. Nerve-energy is vibration. There is no life without force and no force without vibration. Vibration is the elementary basis of all biology."

To speak meteorologically, what should be sought is a high mean temperature within temperate limits, a low relative humidity and a small daily range. The writer recommends some health resorts by sea side like Puri, Waltair. Of the exercises nothing is better than walking.

NESTOR TIRARD recommends a broad flannel binder round the waist to be worn in every case.

Remember the first aphorism of Hippocrates :—

"Life is short, and the art long; the occasion fleeting, experience fallacious, and judgement difficult. The Physician must not only be prepared to do what is right himself, but also to make the patient, the attendants and externals co-operate."

	Acute Nephritis.	Chronic Parenchymatous Nephritis.	Ch. Interstitial N.	Lardaceous N
1. Age	May appear at any age	Common in young adults	Occurs late in life	
2. Onset	Sudden	Gradual but well marked.	Slow and insidious	
3. Cause	Exposure to cold or acute diseases	Usually follows acute nephritis		
4. Urine.— (a) Quantity	Always diminished	Usually diminished	Excessively increased	
(b) Colour		High coloured	Pale in colour	
(c) Sp : gr.	Increased	Slightly diminished or normal.	Diminished	
(d) Casts	Hyaline and blood	Granular and a few hyaline.	Long hyaline	Waxy and fatty
5. Heart	Not affected	Nearly always involved.	Always involved	
6. Temperature	Elevated	Generally Normal	Usually normal	
7. Appearance	Bloated	..	Pale and anæmic	Wax like.
8. Liver and spleen.	Normal	Normal	Normal	Involved
9. Duration		From a month to five years	From five to twenty years,	

LARDACEOUS DISEASE OF THE KIDNEY.

(*Amyloid or Waxy Kidney.*)

The disease is always secondary, gradual in commencement and chronic in progress.

The classical symptoms are :—

1. A worn and cachectic look is very significant
2. Albumin in urine
3. Presence of œdema , dropsy may be absent from first to last, as diuresis and diarrhœa are antagonistic to it.
- 4 Evidence of Suppuration or of syphilis.
5. Presence of painless diarrhœa : the motions are watery and free from mucus.
6. Enlargement of liver and spleen.
7. Arterial tension is usually diminished.

In the treatment of this disease physician should bear in mind :

1. Patients are generally syphilitic ; large doses of Iodides. say 10 to 20 grains are recommended.

Such patients do not bear mercury well ; Iodide of Iron is well borne.

Nourishing food, Cod-liver Oil, iron and quinine are all of value towards this end.

Writer's favourite formula :—

R

Pot. Iodide	gr. x
Syr. Ferri Iodide;	ʒ. j
Aq. Chloroformi	ad, ʒ. i

Mft. for a dose. Sig. one twice a day.

2. Compensate the inevitable loss of potash by the administration of this alkali ; hence liq. potassæ to be given on an empty stomach.

Pure and bracing air is of particular efficacy.

3. Antiseptic Surgery if required.

The effects of treatment are magical.

- (i) Enlarged liver diminishes rapidly.
- (ii) Ascitic fluid is absorbed quickly.
- (iii) Spleen loses its abnormal bulk more slowly than the liver.
- (iv) Kidney is most obstinate to yield.

There is less tendency to uræmia.

For dropsy put the patient under digitalis and Iron.

If diarrhœa be the pressing complaint use ferri alum with opium as follows :—

R.

Ferri alum	gr. j
Ext, Opium	gr. ½

Mft. for a pill. Sig. one thrice a day.

Dietetic and hygienic treatments are like those of Bright's disease.

HÆMATURIA.

Hæmaturia or bloody urine from some part of the urinary tract, is a disease rarely fatal by itself ; and it must not be forgotten that hæmostasis is a process which nature is very often able to effect unaided.

CAUSES OF HÆMATURIA.

1. General diseases :—

- (a) Malignant fever, e. g., Small-pox. malaria.
- (b) Dyscrasia, e. g., Scurvy, purpura, cachexia.

2. Renal causes :—

(a) Treatment.

- (i) From without e. g., fall from a height, blow.
- (ii) From within, i. e. g., stone.

- (b) passive congestion : compression of veins, destruction of arteries.
- (c) active congestion :
 - (i) general e. g., by turpentine, carbolic
 - (ii) partial, e. g., acute nephritis.
- (d) growth and parasite :
 - (i) cystic degeneration. Echinococi (hydatid.)

Affection of Urinary passages:—

- (i) Stone e. g. Calcium oxalate.
- (ii) Growth e. g., epithelioma of ureter, bladder papilloma of bladder ; varicose condition of vein.
- (iii) parasites e. g., filaria sanguinis hominis, bilharzia hominis.

Spontaneous hæmorrhage, often called by the name of renal epistaxis.

Hæmaturia may occur either from kidney, bladder or urethra.

Hæmorrhage from kidney may come either from.

- (a) Kidney substance : e. g., acute nephritis, infection of the Kidney, passive congestion, tumor.

The classical signs are:—renal casts, blood casts, small amount of blood in the urine and hence of *Smoky Colour*, and the presence of large amount of albumin

- (b) Renal pelvis : e. g., pyelitis calculi, tuberculous disease.

The classical sign is :—Urine of bright red colour.

N. B.—In both cases the blood is intimately mixed with urine : if the bleeding be small the urine will be of *Smoky tint* from the action of the acid salts of the urine on the blood pigments, some of the hæmoglobin being converted into acid-hæmatin and methæmoglobin ; in profuse hæmorrhage from kidney urine is of bright red color, and the patient may suffer from attacks of renal colic due to the presence of blood clots temporarily blocking the ureter.

Profuse hæmorrhage is seen in purpura hæmorrhagica, granular contracted kidney.

Hæmorrhage from bladder :—

The classical Signs are :—

Profuse hæmorrhage, constant presence of blood clots, the first portion of the urine is quite clear, the last portion contains blood, hæmatin is present due to the decomposition of blood by acid urine.

Dr, Bolton Bangs (*Journal Genito-Urinary : Dis : page 35 January 1893*) lays down the following rule :

The blood from the bladder is :—

1. much more abundant.
2. More likely to clot.
3. More persistent.
4. When intermittent it has shorter intervals than that from the kidney.

Hæmorrhage from urethra :—

Prostratic hæmorrhage—bright crimson blood is apt to be seen at the end of micturition.

Urethral hæmorrhage—bright crimson blood is to be found at the very beginning of passing urine, then there is no blood during the act of micturition, the residual drops contain blood.

Medical Treatment.—

Writer's favourite formulæ.

R

(i) Ext. Ergot liq. (Hewlett's)	m. xx
Acid Sulphuric Aromatic	m. x
Hazeline	m. xx
Glycerine	m. x
Acid Infusion of Rosæ	ad. ʒ. j

Mft. for a dose ; Sig ; one every three hours,

R,

- | | | |
|------|----------------------------|----------|
| (11) | Calcium Chloride | gr vii |
| | Tinc Ferri perchloride | m. x |
| | Liq. Morphin hydrochloride | m. x. |
| | Aq Cinnamomi | ad. 3 j. |

Mft for a dose Sig one every three hours.

Calcium chloride increases coagulability of blood but it is incompatible with milk, hence milk should be withheld during its administration,

If bleeding is not stopped:—

Liq : adrenalin (1 in 1000) m.x every 3 hours upto 3 or 4 doses.

The following are few extracts from Journals :—

1. Dr Tuttle states he had found powdered cinnamon very valuable in the treatment of bleeding from the genito-urinary tract.
2. Dr. Woldert in *New York Medical Journal January 4 1896* recommends 10 drops of oil of turpentine every 4 hours in malarial hæmaturia: he advises to stop giving quinine.

Prof. Osler on the other hand remarks :—

“It is a risky remedy in hæmaturia.”

3. Carnot in *Therapeutic Monats June 1900* recommends gelatin.

Half a litre of the 10 per cent. gelatin sol. was administered daily by the mouth for a week.

4. Burn and Goff (*British Medical Journal 1898 Vol. ii. p. 808.*) recommends Tinc. Cantharides m. v. three times a day to stop renal hæmorrhage, the writer has no knowledge of this heroic medicine in this fell disease.
5. Hæmaturia follows after eating garden rhubarb due to oxalate of lime present in the vegetable.

“Another expedient is the injection of iced water into the rectum.”

(*Burney Yeo's Manual of Medical treatment, Vol. ii, page 176*).

Hygienic treatment—

Rest is essential. If caused by renal calculus the recumbent posture may suffice to check the hæmorrhage : Room should be made dark. Floor of the room should be covered with carpet to avoid noise.

Dietetic treatment—

Milk and its derivative, fermented milk, barley water, linseed tea flavoured with rose water, if milk disagrees albumin water flavoured with cinnamon is strongly recommended by the writer.

PYURIA.

Pyuria or pus in the urine, is a common pathological condition worth perusal. It is indicative of an inflammatory process some where in the urinary apparatus, from the kidney to the external meatus :

- viz 1. Kidney
 2. Bladder
 3. Urethra. { 1. Anterior.
 { ii. Posterior.

1. Kidney inflammation :—

- a.* Albumin is '2 per cent. or above, it is nucleo-albumin or serum-albumin according to the origin of albumin from pus or blood.
- b.* Presence of casts.
- c.* Tubercle bacillus is pathognomonic of kidney involvement.

Primary tuberculosis of bladder is very rare.

- d.* The statement that acid urine denotes a kidney lesion, has been disproven.

2. Vesical inflammation,

- a.* Albumin is less than '2 per cent.
- b.* Absence of casts.

- c. Absence of tubercle bacilli.
- d. The statement that alkaline urine points out a bladder lesion, has been disproven

3 Urethral Inflammation.

- i. Anterior urethritis.
 - a. Urethral discharge is present.
 - b. The first portion of urine contains pus, the rest clear
- ii. Posterior urethritis.
 - a. Urethral discharge is absent.

The muscle of Bell has given way or a regurgitation of pus from the posterior urethra into the bladder has occurred.

- b. The first portion of urine contains pus, the rest clear.

Treatment of Pyuria.—

Internally:—

i. Salicylates and benzoates have the reputation of acidifying the urine. For chronic urinary infections the use of benzoates is advocated.

- 2. Salol, urotropin and helmitol are used.

i. R

Urotropin	gr. v
Tinc: Hyoscyamus	m. xx
Inf: Buchu	ad. 3, i

Mft. for a dose : Sig: one thrice a day.

ii. R

Helmitol	gr. v
Pot. citras	gr. xx
Ext. Punarnava liq. (Bengal)	m. xx
Inf: Buchu	ad. 3, i

Mft : for a dose : Sig : one thrice a day.

These are excellent urinary antiseptics and are used in cystitis. They reduce vesical irritability and give relief to patients with the acid urine of bacilluria or gonorrhœa.

Prolonged use of helmitol gives rise to gastric disturbances.

Urethral wash :—

Wash the bladder with three per cent, sol : of boric acid, followed by intravesical injection of 100. c.c. of 1 per cent. collargol or quinine acid Hydrochloride sol.

*Post urethritis:—*Two prostatic massages are recommended : they free the prostatic ducts and thus secure drainage.

Ant urethritis : Wash the urethra antiseptically with a special urethral syringe so that pus may not enter the bladder.

MASTURBATION.

The nervous and Mental Effect of Masturbation.—

Dr. E. M. Hummel (*New Orleans Medical and Surgical Journal April 1909.*) thus summarizes.

- 1 That the masturbation of young children is merely a form of specialized tickling without true or major sexual excitement, and practically without morbid results.
2. That the same practice in the adult female partakes usually somewhat of the nature of that of children, as the deeper sexual emotions do not seem to be enlisted in the act. But in some women masturbation is a deeply sexual affair ; however, in instances of excessive indulgence certain alterations in the affective character are observed, such as aversion toward the male sex, inability to experience natural libido, morbid fondness for solitude, sensitiveness about matters of sex and a tendency to attach a sexual significance to irrelevant things, loss of countenance etc.
3. That in the male normal sexual indulgence as well as masturbation implies a higher pitch of erethism and a greater expenditure of nervous energy. The

climax of excitation in masturbation is higher than in normal intercourse, and for this reason more of an insult to the cerebro-spinal centres. Excessive venery is harmful to nervous health and incompatible with a high order of mental capacity. Masturbators suffer like consequences to a greater extent.

4. Masturbation, then may most properly be assigned as a sole exciting cause of some neurasthenic states, certain perversions of normal sexual inclination with more or less functional impotence, and reductions in character tone. The most profound nervous or mental result ever observed by the author as a consequence of masturbation was a profoundly neurasthenic and psychasthenic state with light dementia, in which the patient was so debilitated that he easily succumbed to a trifling intercurrent malady.

The writer recommends the following points :

1. Moral treatment.

Remove the child from vicious circle, and let him be in the atmosphere of the good. Mental telepathy by suggestion is the best antidote for such a practice.

2. Spinal bath or shower bath with cold water is highly beneficial.
3. Pour cold water over the genital before going to bed.
4. Let him lie on hard bed as constant friction with soft bed irritates the genital centre of the lumbar cord.
5. Too much sleep to be avoided.
6. As regards medicine nothing is better than pulsatilla,

R.

Ext : pulsatilla liq.

3. ii

Aq :

ad. 3. iv

Dose a teaspoonful 4 times a day.

N.B. - Pulsatilla lessens sexual excitement but does not diminish sexual power.

Bromide lessens sexual excitement and diminishes sexual power.

Sexual desire is diminished by myrabolium, lupulin bromide and camphor monobromata.

IMPOTENCE

Impotence or loss of sexual appetite is a disease for which the people are so to speak mad.

They generally call on the physician in a melancholic mood and complain of nothing but sexual affairs.

Some are so depressed that lives are not worth living and will run amock if the medical attendant candidly give vent to unfavourable prognosis ; hence it seems rational to cheer up the patient with hopeful prognosis however rotten the basis may be.

Causes of impotence :—

1. Neurasthenic or psychical.
2. Functional or abuse of genitals.
3. Paralytic.
4. Toxic.
5. Congenital.

Writer's favourite formulæ :—

1. Yohimbinae hydroch tablet. (*Merck.*)

It is a very useful aphrodisiac in congenital cases ; it can be used in other types of this disease.

2. R

Auri bromide	gr. 1/24
Sodii Glycerophosph	gr. ij
Ext. Dameana	gr. j.
Ext. Nucis Vomica	gr. 1/4
Ext. Cannabis	gr. 1/4

Mft. for a pill. Sig. one twice a day.

It works wonder in neurasthenic and paralytic types of cases.

3. R

Mookavvee palatinoid (*Oppenheimer*) contains Spirmine, cerebral grey matter, musk, ambergris, chloride of gold and sodium, dose one twice a day.

It is very efficacious in neurasthenic and paralytic cases.

4. Testicles of goat fried in ghee, hydropathy (*i.e.* spinal bath, shower bath) absolute rest from sexual affairs for sometimes to gain the vital function are indispensable in functional types of cases.

5. Electro-therapy is recommended in paralytic cases.

6. In toxic cases treat the cause carefully, *e.g.* in diabetes loss of sexual power is due to some toxic poison (sugar) circulating in the blood.

Sexual desire is increased by—dameana, strychnine, cocoa, phosphorus and cannabis indica.

In conclusion the patient should be well fed with nourishing diet rich in organic phosphorus *e.g.* yolk of egg, brain, ripe seeds of 'Pulwal,' 'soji', &c., should massage the genital gently with pure mustard oil to cause hyperæmia, and be well fortified in mind with auto suggestion that he shall and will be cured.

NOCTURNAL ENURESIS.

Nocturnal Enuresis, an involuntary escape of urine is due to the hyper-sensitiveness of the centre, deficiency of nocturnal delicacy of perception, either on the part of the lumbar cord or the higher centres to which the former transmits its own knowledge.

Causes are :—

1. The sleeping habits of the nervous system.
2. The condition of the prepuce, urethra and the rectum.
3. The possibility of the existence of some local disease as :—

(a) paralysis of the sphincter vesicæ causing an incomplete closure of the urinary outlet.

- (b) the presence of calculus at the neck of the bladder.
- (c) enlargement of the middle lobe of the prostate.
- (d) malformations, as spina bifida etc.

N. B.—In females incontinence of urine may result from overdistention of the urethra, prolapse of the mucous membrane through the urethra or to the presence of Vesico Vaginal fistula, the result of the injuries during parturition.

- 4. The presence of worms as *ascaris lumbricoides*.
- 5. The condition of the urine.

Treatment

Each case must be carefully investigated and treated accordingly.

1 The tone of the nervous system is to be corrected by giving

- (a) Nervine tonics, the best being the arseniates of iron, quinine and strychnine in small doses
- (b) Nervine sedatives, the best being potassii bromide and chloral hydrate.

2 If due to phymosis this must be attended to by an immediate circumcision.

3. If due to atony of the bladder.

1. Dr Mealester's formula :—

R̄

Liq. atropinæ sulp.	℥. iss
— Strychnine Sulph.	m. xlv
Syr. Aurantii	ad. ℥. j

Dose 5 drops in a tablespoonful of water at 9 P.M.

11. Writer's formula :—

R̄

Tinc. Nux Vomica	m. iv
— Rus. tox	m. ij
— Belladonna	m. iv

Mft. for a dose ; to be taken before going to bed.

Tinc. Belladonna or liquor atropinæ, has proved beneficial in many cases. In the use of belladonna or atropinæ, the drug should first be given in small doses, gradually increased until the pupils are moderately dilated. The liquid extract or the tincture of ergot has succeeded when others have failed.

4 Local congestion due to the presence of worms must be relieved by santonin

5. If the urine be turbid and alkaline, dilute phosphoric acid with tincture nux-vomica may be given. At the same time the quantity of drinks is to be restricted.

Hygienic treatment :—

The general health must be improved. Exercise in the open air and in the sun-light and even change of climate in some cases is advisable. Tepid and cold bathing is to be advised. Cold sponging over the spine and inside and outside the thighs, even cold compresses to the perenium and in obstinate cases, general massage may prove beneficial. The child should pass water before getting into bed and if possible the bowels also are to be emptied. The patient should be woke up in the night and made to pass water. He should be properly clothed so that he will be neither too hot nor too cold when asleep and the mattress should be moderately hard. If possible he should never be allowed to lie on his back during sleep

Dietetic treatment :—

The diet should be regulated. The evening meal should always be light and easily digestible. Tea or coffee should be avoided.

ORCHITIS.

Orchitis means acute inflammation of the testicle.

Causes are :—

- 1 Local injury.
2. Irritation of prostatic urethra.
3. Metastasis as in gout.
4. Strong injection for the cure of gonorrhœa

Treatment :—

Patient should be on bed and on milk diet.

Internally :—

R̄

Tinc : aconite	m. i
Tinc : Pulsatilla	m. ii
Liq : Cinchona hydrobrom	m. v
Aq : aurantii floris	ad. ℥. i

Mft for a dose : Sig · one every thrée hours.

*Externally :—***I Hot fomentation**

R̄

Ichthyol	℥. iv
Ext : Belladonna	℥. iv
Glycerine	ad. ℥. ii

Mft apply thick over the swollen testicle, then cover the part with oiled silk followed by hot boríc poultices.

II. Cold compress.

(a) Writer's favourite formula :—

R̄

Ammon Chloride	℥. ii
Spt. Vinum rect	℥. iss
Tinc. opii	℥. ii
Liq : Plumbi diacetatis	℥. ii
Aq : Pura	ad. ℥. xii

Mft. apply the lotion cold.

(b) Cold compress of saturated solution of mag. sulph.

III. Paint the part.

R̄

Emplastrum belladonna fluidum	
(Ferris)	℥. iv
Ext. opii	℥. i

Support the testicle with suspensory bandage.

WEEPING ECZEMA OF SCROTUM.

Open bowels by saline.

Internally :—

Rx

Liq. Arsenicalis	m. iv
Pot : bitartaras	gr x. x
Inf : Cinchona	ad. ʒ. i

Mft. for a dose : Sig : one thrice a day after meal.

Externally :—

1. Rx

Ichthyol	gr. x
Acid salicylic	gr. v
Resorcin	gr v
Zinc : oxide	ʒ. ii
"Neem" oil	ʒ. vi

Mft : Apply over the eczema.

ii

Rx

Cocaine hydroch	gr. iv
Bismuth subnitras	gr. v
Iodol	gr. v
Oil sandal wood	ad ʒ. ss

Mft. apply over the sores.

CALCULUS.

Calculus is formed by the deposition of certain of the solid constituents of the urine concretions ; they form in concentric layers and are generally mixed The formation of stone in the kidney is the result of some defect in general metabolism , men are more often affected than woman. It is aggravated by sedentary life, by insufficient fluid, by an excess of nitrogenous or saccharine food, and possibly of the salts of lime.

§34 DISEASES OF THE GENITO-URINARY SYSTEM.

Calculus occurs with peculiar frequency in certain localities—"stone district." The home of calculus so to speak embraces that part of tract where hard mineral water is generally used for drinking purpose.

The following districts in India are notorious for calculi, *eg* :—

- (i) Sub-Himalayan regions *eg.*, Rangpore, Dinagpur etc.
- 2 Munghyar district.
3. Gyæ district.
4. Santal purganas.
5. Central India.
- 6 Jubbulpore district.
- 7 Some parts of north west province.
- 8 Hill and mountain region as a rule.

Life history of a calculus :—

If crystalloid substances normally held in solution in the urine, are deposited in excess (*i.e. beyond physiological limit*), become cemented together around a nucleus such as mucus, blood clots etc, and are subsequently added to by fresh depositions from the urine, a calculus is constructed.

Henry Morris remarks —

"The nucleus in the case of an infant is usually formed of ammonium urate, that in a person of 15 or 16 years of age consists of uric acid, while after 40 years oxalate of lime constitutes the nucleus."

Fate of a calculus :—

1. A calculus may remain in the pelvis, giving rise to *chronic pyelitis* for years.
2. By its movement it may produce acute symptoms *eg., renal colic, hæmaturia.*
3. It may obstruct the ureter and lead to *hydro or pyo-nephrosis.*

- 4 If other kidney is diseased, sudden blocking may lead to *suppression* of urine
5. It may pass into the bladder and result in cystitis
- 6 Small calculus may pass through the urethra as *gravel*
7. It may become encysted and quiescent

Physically 3 varieties are recognised .—

1. Small gritty particles—"renal sand."
2. Large concretions ranging in size from a pea to a bean, may be smooth, rough or mammillated.
- 3 Dendritic form of calculus, *e.g.*, y-shaped stone, coral calculus.

Chemically 4 varieties are found :

- 1 Uric acid calculus

It is very hard, surface is smooth, colour reddish, large one is stratified and very dense , usually uric acid and urates are mixed. Urate of soda is met with chiefly in gouty subjects and children.

- 2 Oxalate of lime.

It is mulberry-shaped, studded with points and spines, dark in colour and intensely hard.

- 3 Phosphatic calculus is composed of phosphate of lime and ammonio-magnesium phosphate.

4. Rare forms of calculus *e.g.*, cystin, xanthin etc

Classical symptoms of renal calculus :

The history of recurrent attacks of one sided colic with pain radiating to the bladder, testes, penis, thigh or groin, of the expulsion of small calculi, of the aggravation of renal and radiating pains by exercise, dietetic imprudence or climatic changes , of the appearance of " smoky " blood in the urine after exercise , of the absence of tubercle bacillus in the urine and the constant presence in that excretion of pus, blood etc.—these form the bold and well-known outlines of one of our clinical pictures.

Classical signs of vesical calculus :—

1. The history of colic pain radiating towards testicle or penis.
2. The history of hæmaturia,
3. A sense of heaviness in the region of bladder due to the presence of stone.
4. Patient feels much worse after physical exertion e.g., travelling in train, cycling etc., because the calculus moves to and fro thus causing pain.
5. Frequent micturition due to the presence of a foreign substance in the bladder
6. History of sudden stoppage of urine during the act of micturition due to the appearance of stone at the neck of bladder. The more the man exerts to pass urine, the less the urine comes out; the calculus acts like a valve.
7. When urination is over the patient has bitterly experienced pain due to the contraction of the walls of bladder over the stone.
8. History of piles, the man stains during micturition, the hæmorrhoidal veins protruberate thus causing piles.

For practical purposes treatment is divided into two groups :—

- i. Attack of renal colic.
 - ii. Between the attacks.
- i. Treatment of renal colic

Hypodermically :—

- a. Morphin hydroch gr. $\frac{1}{4}$ once or twice as required.
- b. Morphin sulph gr. $\frac{1}{4}$ and atropin sulph gr. $\frac{1}{150}$ once or twice as required.

Locally:—

- a. Hot hip bath relaxes the spasm.
- b. Hot poultices over the seat of pain.
- c. Opium or belladonna plaster followed by fomentation.

Orally :—

Writer's favourite formulæ :

a. \mathcal{R}

Heroin Hydrochlor	gr. $\frac{1}{4}$
Spt. Etheris Co :	℥. ss
Spr : Chloroform	m. xx
Inf : Buchu	ad. ℥. i

Mft : for a dose : Sig : one every 2 hours upto 3 doses.

b. \mathcal{R}

Spt. Etheris Co,	℥ ss
Liq : morphin hydroch	m. xxxxx
Tinc : Hyoscyamus	m. xxxxx
Aq : Chloroformi	ad. ℥. i

Mft : for a dose : Sig : one every 2 hours upto 3 doses.

c. Prof : Murray advises belladonna.

- (i). Pushing the drug to its toxical stage beginning with 40 min. of tinc : and repeating every 2 hours according to the intensity of pain :
- (ii) The writer recommends the following cachet. :—

Atropin Methylbrom	gr. $\frac{1}{60}$ to $\frac{1}{30}$
Sacch lact	gr. v

Dose 2 cachets daily.

Toxic symptoms are :—

Dry throat, dilated pupils etc.

d. Drink freely hot lemonade, soda water, lethia water, barley water, etc.

Each attack of colic is an indication of Nature's efforts in expelling the calculus and generally means a distinct progression.

Large quantities of natural alkaline mineral water should be taken ; their efficacy is probably due to their volume and diuretic action rather than to any solvent tendency.

A teaspoonful of glycerine has been recommended to aid the passage of calculus.

Per rectum :—

a. In left sided urethral calculus an enema of hot water per rectum, will often relieve the patient of pain and hasten the progress of the calculus down the ureter to the bladder.

b. Suppositories of Belladonna and opium,

Rx

Ext. Belladonna	gr. $\frac{1}{4}$
Ext : Opii	gr. $\frac{1}{2}$
Oil of theobroma q s.	

Mft. for a suppository, to be used as directed.

Inhalation :—

a. Inhalation of chloroform is recommended in severe cases.

Postural :—

a. Inversion of the patient is occasionally said to be followed by immediate cessation of the pain (*Osler.*)

b. Patient should lie with the shoulders and thighs raised.

Treatment between the attacks:—

Live a quiet life, avoid sudden exertion of all sorts *e.g.*, running, jumping etc.

Treatment may be :—

- i. Prophylactic.
- ii. Palliative.
- iii. Surgical.

i. Prophylaxis.

Food must be moderate in amount, carefully selected animal diet to be used in moderation ; an excess of nitrogenous food to be avoided ; diluents to be taken liberally. Alcohol is prohibited ; in uric acid diathesis avoid red meat altogether , moderate exercise in the open air sufficient to use up all nitrogenous food is recommended,

For practical purposes there are three kinds of calculi :
viz :—

- i. Uric acid and urate.
- ii Oxalate.
- iii. Phosphate.

Uric acid diathesis .—

- a.* Piperazine is a powerful solvent of uric acid , it is
12 times stronger than lethium salts ;

It is best given in an effervescent form.

- e.g.* i. Piperazine middy.
- ii. Piperazine effervescence (Bishops).
- iii. Piperazine gr. v dissolved in lethia or potash
ærated water.
- b.* Lycotol :
- c.* Mag : Sulph two drachms to be dissolved in soda
water early in the morning.
- d.* Thiolian (*a laxative salt of lethia*) ; dose a teaspoon-
ful in a glass of warm water early in the morning.
- e.* Writer's formulæ.

(i) R

Lethium citras	gr. iv
Pot : citras	gr. vii
Caffeinæ citras	gr. i
Spt. Chloroform	m. x
Glycerine	m. xv
Inf : Broom top	ad. 3 j

Mft. for a dose : Sig : one thrice a day.

(ii) R

Piperazine	gr. iii
Liq. arsenicalis	m. ii
Lethium carb	gr. iv
Pot : Bicarb	gr. v
Tinc : Hyoscyamus	m. xx
Inf : Buchu	ad. 3. i

Mft : for a dose : Sig : one thrice a day.

(f) Robert's formulæ :—

One drachm of Pot. bicarb to be dissolved in a tumblerful of water and to be taken at bed time.

(g) Benzoate of lethium gr. v. to be dissolved in a two pints of distilled water or rain water.

(h) R

Sodii Bicarb	℥. iss
Acid Benzoici	℥. ss
Sodii phosph	℥. ii
Aq : Bullientes	℥. iv
Dissolve, filter.	
Aq : Cinnamomi	ad. ℥. vi

Mft : Sig : two tablespoonful of the mixture thrice a day.

(i) *Herrmann* recommends glycerine.

(j) G. Wittzack recommends urea.

(2 5—5 dr in 6 ozs. of water)

Dose a tablespoonful every two hours.

(k) *Nicolaier* recommends Urotropin gr. xv daily.

(l) Sidonal (*Piperazin quinate*).

Dose ʒ5 to 1 drachm.

(m) Chinotropin. (*Urotropin quinate*)

Dose 1—1·25 dr.

(n) Urol. (*urea quinate*),

Dose 15 to 45 gr.

(o) Hexamethylamine gr. xv—xx taken in one daily dose in plenty of water. It prevents ammoniacal fermentation and greatly increases the dissolving power in the urine for uric acid.

(*Merck's Archives for April 1910.*)

ii. Oxaluria :—

(a) *Klemperer* in *La Sem. med.* 1901 page 422 recommends meat, fat, dry vegetable starchy food, and mag : sulph half a drachm daily, and forbade milk (*which is rich in lime and poor in magnesia*), eggs

and all vegetables containing oxalic acid, treat dyspepsia carefully. Avoid rhubarb, tomatoes, cabbage, onions, sweets and alcohol.

- (b) Langdon Brown (*Clinical Journal Jan. 22, 1908*) points out the origin of oxalates in urine as follows :—

Exogenous :—

- (a) Direct injection of oxalates in the food e.g., rhubarb, spinach, straw-berries, tomatoes, figs, potatoes, beet roots, french beans, plums, tea, coffee and cocoa.
- (b) From gastric fermentation.

The other chief sources of oxaluria are the products of decomposition resulting from fermentation of the gastric contents.

This fermentation is usually associated with a deficiency in the secretion of hydrochloric acid in the stomach, and the oxalic acid is derived from the fermentation of carbohydrates especially sugar.

It is a sign of fermentative dyspepsia :

Oxaluria is a common disease among the inhabitants of lower Bengal, though water is very poor in calcium salts.

This apparently seems to be a paradox :

It is very common amongst vegetarians, but less amongst those who live upon a mixed diet *i.e.*, meat and vegetable diet.

2. *Endo-genous* :—

When the metabolism of liver is incomplete it is easy to suppose the central carbon chain of uric acid is not completely oxidised and oxaluria results.

N. B.—The association of oxaluria with albuminuria is a matter of some discussion. The view commonly held is that the excretion of calcium oxalate crystals mechanically irritates kidney.

Berguignan regards both oxaluria and albuminuria as the result of absorption in perverted gastro-intestinal conditions, the albumin being due to direct absorption by a damaged epithelium.

Baldwin's oxalate-free diet is composed of meat, milk, eggs, sugar, butter, wheat meal, rice and biscuits :

The writer in addition recommends the following :—

Peas, onions, cauliflowers, pears, peaches, grapes, melons.

N.B.—Cream tends to dyspepsia with reduction of hydrochloric acid, and sugar by its fermentation produces more oxalates.

(*Clinical journal January 22, 1908.*)

Treatment

The patient should take early in the morning 3 ozs. of mineral water *e.g.*, apenta mixed with equal volume of warm water.

At 8 A.M., an ounce of 'helancha' juice diluted with two ounces of fresh raw milk immediately after being milched.

After meal the writer recommends the following :—

Rx

Acid nitro-muriatic (Dil)	m. x
Tinc : Nux vomica	m. iv
Glycerine acid popsin :	ʒ. j
Spt : Chloroform	m xv
Inf : Gentian Co.	ad. ʒ. j

Mft : for a dose. Sig. to be taken after meal.

The following drugs are very useful ,—

1. Magnesia, as oxalates are more soluble in the presence of it.

Peas are good as they are poor in oxalates but rich in magnesia.

2. Citrate of potassium or sodium is of great value as it is not only diuretic but tends to prevent the formation of oxalates of lime crystals by forming a soluble double salt.

3. Lemon Juice :

4. Maguive (*Lancet November 1909*), recommends acid phosphate of sodium as a solvent of calcium oxalate

He first gave half an ounce, then two ounces of acid phosphate of soda dissolved in 100 ounces of distilled water, and flavoured with essence of ginger, during 24 hours as far as possible remote from meal times.

iii. Phosphaturia.

Phosphaturia is merely a sign of diminished acidity of the urine.

Now, if there is excessive secretion of hydrochloric acid in the gastric juice there will be less acid at the disposal of the urine. Phosphaturia is therefore very common in hyperchlorhydria : (*Clinical Journal January 22. 1908*)

Normally Phosphates are present as :—

- a. Acid phosphates of sodium and Potassium.
- b. Earthy phosphates of calcium and magnesium, and ammonio magnesium phosphate (*triple phosphate.*)

In cystitis the ammoniacal decomposition will lead to a deposit of phosphates (*triple phosphates*).

In wasting diseases phosphates appear in the urine due to the disintegration of nucleo-proteids.

Phosphaturia may occur in cases of marked depression without wasting :

It is symptomatic of a diminished formation of acid due to a general depression of metabolism :

Treatment.—

We must remember that phosphaturia is a symptom and not a disease,

1. If triple phosphates are present, seek a cause for cystitis and treat it accordingly.

a. *The writer* recommends two drachms of acid sodium phosphate and ten grains of urotropin to be dissolved in a bottle of soda water and to be taken by sips within 24 hours.

b. \mathcal{R}

Acid Benzoic	gr. vii
Acid Boric	gr. vii
Saccharine	gr. iii

Mft. for a pulv. Sig. One thrice a day.

c. *Whitla* recommends 8 to 10 grs. of boric acid by the mouth with "surprising" efficacy.

d. *Burney yeo* recommends salol.

2. If phosphaturia depends on hyperchlor-hydria, the digestive condition requires treatment.

a. \mathcal{R}

Lethium Benzoate	gr. v
Ammon Benzoate	gr. vii
Aq. distil	℥. ii

Mft. for a dose. Sig. one twice a day.

N.B.—Stop alkaline treatment if urine becomes ammoniacal.

b. \mathcal{R}

Lacto-peptin :

Dose one drachm twice a day after meal.

3. If earthy phosphates be associated with wasting, find out the cause of wasting and treat it accordingly.

4. If earthy phosphates be a symptom of depressed metabolism give him acid with tonics :

\mathcal{R}

Acid Nitromuriatic (Dil.)	m. x
Tinc. Nucis Vomica	m. iv
Tinc. Carminative	m. xv
Spt. Chloroform	m. xv
Inf. Gentian Co.	ad. ℥. i

Mft. for a dose. Sig. one thrice a day after meal.

The following are very useful —

1. Butter milk or better fermented milk
2. Acid fruits *e.g.* oranges, pomegranates.
3. Purified "Silajatu" gr 11 with two ounces of luke warm milk once at night after meal, then gradually increase the dose to four grains
4. A dose of cortex ville water early in the morning is very efficacious

Phosphoric acid exists in three states *viz* :—

Acid

Alkaline.

Neutral.

{	Phosphoric acid dil B P. ..	.. Acid.
	Efferv. Sodii phosph .	Alkaline
	Sodii sesquiphosphate (<i>Martindale</i>),	Neutral
	Sanatogen (<i>Glycero-phosphoric acid and pure casein</i>),	Neutral.

Hence the rational plan of treatment would be.

- i. If the degree of acidity of urine is subnormal, the phosphorus is given in the form of free phosphoric acid.
- ii. If the urine is hyper-acid an alkaline preparation is selected.
- iii. If the urine is neutral in reaction, neutral phosphate is recommended.

Treat the patient symptomatically —

Cystitis.

Christian (*Therapeutic Gazette May 15, 1910*) classifies it as :

(a) *Acid Cystitis.*

(b) *Alkaline Cystitis.*

(c) Acid cystitis is produced by the colon bacillus alone without mixed infection, and requires internally

the administration of alkaline diuretics, such as citrate and acetate of potash with infusion of buchu, together with the pretty free use of alkaline mineral waters.

- (b) Alkaline cystitis is produced by microbic infection other than colon bacillus

There may be ammoniacal urine with marked phosphatic deposit :

The writer recommends the following combination :—

- i Urotropin gr. v. twice a day with linseed tea :

N.B—Linseed—2½ drachm.

Liquoris—i

Boiling water—10 ozs

Dose.—ad libitum.

Urotropin sometimes causes hæmaturia (*British Medical Journal June 26, 1901*)

ii R̄

Sodii Benzoas	gr x
Spt. ammon aromatic	m. xv
Tinc Hyoscyamus	m xx
Inf Buchu	ad ʒ i

Mft. for a dose Sig. one thrice a day.

2. Hæmaturia.

(a) R̄.

Ext Ergot liq. (Hewlett's)	m. xx
Hazelline	m xx
Inf. matico	ad. ʒ. i

Mft. for a dose. Sig. one every 4 hours

- (b) Injection of liq : adrenalin into the bladder through catheter, acts miraculously

3. The writer recommends the following indigenous drug which acts marvellously :—

R̄ Sara punkha kshar' (asher)
(Tephrosia purpurea) 2 Scruples.
Dec. of 'Kulatha Kalie' (Dolic Uniflorus) ʒ. ii.

Mft. for a dose : one thrice a day.

To be continued for a fortnight

This mixture is reputed to dissolve small calculi

Palliative treatment :

Saline aperient to be taken early in the morning & g
contrexville, vichy, alkaline drinks or distilled water are to be
used freely

Surgical treatment.—

Nephro-lithotomy or nephrotomy is indicated

1. When the symptoms of stone are severe and are not removed or rendered bearable by several months of medicinal treatment and rest
2. When, in order to diminish pain and hæmaturia, the patient is compelled to confine himself to the recumbent posture.
3. When anuria supervenes upon the symptoms of calculus in one or both kidney or kidneys
4. In large vesical calculus examine the patient by cystoscope : X ray diagnosis of urinary calculi continues to be a subject of surpassing interest to all practical radiographers. After the diagnosis is made, crush the stone by litholapaxy.

During convalescence a mixed diet with tonics and an abundance of fresh air afford the most effective means of combating the defective metabolism

Dietetic treatment.

Remove the patient from the stone district, prescribe simple easily digested food, promote diuresis by drinks.

The following cold drink is efficacious.

Fry "tese" on a pan, pound it into fine powder, add boiling water to the proportion of one ounce to a pound of water ; you may pour little rose water for flavour : Dose ad libitum

GONORRHŒA.

Gonorrhœa is a contagious inflammation caused by gonococci, it attacks mucous membrane of the genito-urinary tract. Up to the present time no animals except man have been shown to be truly susceptible to infection with the gonococcus. (*A system of Medicine, Osler and Mc Cræ Vol. viii P. 89*).

For practical treatment it is divided into two stages :—

1. Acute
- ii. Chronic

1 Acute.

Prophylaxis. This subject is one of the most important subjects in medicine, yet it is coolly passed over in all our text-books

The busy physician has neither the time nor the inclination to ferret out exactly how his patients get infected, but busies himself with the treatment

The gonococcus is not a motile germ, and certainly cannot make its way from the vagina into the male urethra during coitus. Infecting a coccus-free urethra with gonococci from culture produces typical gonorrhœa from twenty-four to forty-eight hours. Infection after coitus *rarely* takes place under five days, and the majority of cases, between five and seven days.

How can we explain this discrepancy

First, by the lack of prophylactic measures.

Secondly, by the incomplete prophylaxis used.

By incomplete prophylaxis, we mean the ordinary measures designated by the ordinary physician consisting of antiseptic, astringent or alcoholic washes, medicated soaps etc.

Lack of prophylaxis results in gonorrhœa in about 95 per cent. of all cases.

During coitus the dorsum of the penis acts much the same as the examining finger, stroking out quantities of pus from the female urethra. This pus mixing with the residual pus in the vagina, and rendered more viscid by the glandular secretions during sexual excitement, is siphoned out by the piston-like action of the penis and deposited among the hairy portion of the peni-pubic junction. The scrotum, which is in immediate contact with the perineum receives the bulk of the material siphoned out.

After coitus the usual incomplete prophylactic measures are resorted to, the penis is washed with any numerous washes, injections are taken and internal medication resorted to. *The hairy regions being neglected, the pus cells (containing the gonococci) and mucus are rubbed off unto the under-wear or trousers, from there to the glans penis where they gain entrance into the urethra.*

This may take a day or days, owing to the vitality of the germ, or the amount of nourishment in the pus cell.

The non-erectile condition of the penis with the consequent resting of the glans against the hairy portion of the scrotum also leave the way clear for the gonococci to enter the urethra.

It can readily be seen that the simple asepsis of the penis alone, and all the other medication is absolutely useless unless the hairy regions around the pubes and scrotum are thoroughly cleansed. *Asepsis of the entire sexual regions will absolutely prevent gonorrhœa.*

There will always be the patient "who thought he had gotten a virgin,"—"who was in a bad place where there was no water," to say nothing of uncleanness. Instead of fatherly lectures on alcohol and tobacco, lead your sons out into the wood-shed, when they reach the age of puberty, and tell them how to take care of themselves after coitus. Advice of this kind would bring more grandchildren into the world and less abdominal operations on our married daughters.—T. W. ROSS.

In conclusion wash the penis, pubic part and scrotum, and soak them for five minutes in a 1 : 1000 perchloride solution, followed by an injection of 1 per cent. protargol solution held in the urethra for five minutes, an application of 30 per cent. calomel ointment round glans penis is good

Injections are the best means of destroying the germs directly, simple astringents such as zinc sulphate have no disinfecting action : hence silver salts are recommended.

Organic silver preparations cannot penetrate so deep as the inorganic, but inorganic silver preparations after long use lead to epithelial growth

The following organic silver preparations are recommended per urethral injection :—

- i. Albargin (·02 to ·01 per. cent) produces no epithelial proliferation and in the anterior portion of the urethra is found to penetrate deep.
- ii. Protargol ($\frac{1}{4}$ per cent. to 1 per cent) should be retained for 10 to 15 minutes and injected twice a day.
- iii. Argyrol ($\frac{1}{4}$ to 1 per cent sol) should be retained for 10 to 15 minutes and injected twice a day.
- iv. Argonin ($\frac{1}{4}$ to 1 per cent sol) is to be kept for 5 minutes and injected twice daily
- v. Nargol ($\frac{1}{4}$ to 1 per cent. sol.) yields most excellent results.

N. B.—Urethral injections should be done by a special urethral syringe with a bulb and perforated long nozzle.

Another method of injection :—

The patient must have a full bladder, having passed only a little urine to clean the urethra. Then pass a soft catheter until urine just begins to come out, the moment this happens draw it slowly back till none comes.

Inject fluid within the catheter very gently and slowly withdrawing it while injecting

Solutions employed are any of the above or any of the following :—

- (a) Pot. Permanganate 02 per cent.
- (b) Zinc Sulphocarbolate .2 per cent
- (c) Mercuriol (*Parke Davis & Co*) 1 per cent.

Inject once a day : treatment to be continued until the threads disappear.

When there should be no injection ?—

So long there is any swelling of the glans or penis, œdema of præputium with complete or incomplete phymosis, dorsal lymphangitis, blood in the secretion, smart pain on micturition or erection

When injection to be suspended ?—

- 1, Whenever the patient begins to complain of a constant desire to micturate, of a feeling of weight and uneasiness about the rectum, of pain and swelling of the testicle, or of any other symptom which suggests the extension of the inflammation *by continuity of tissue* to the posterior portion of urethra, prostate or bladder
- 2 When gonococci *escape into the general circulation* giving rise to rheumatism, arthritis, synovitis and endocarditis.

Internally :—

1. Sandalwood oil and balsams are the best known medicine of this disease The bactericidal power of balsam is practically nil.

The following is the favourite prescription of the writer:—

R

Santaline m. xx, in a glass of "Isapgool" water
twice a day two hours after meal.

552 DISEASES OF THE GENITO-URINARY SYSTEM.

Contra-indications :—

- (a) Gastric trouble, *e. g.*, nausea, vomiting.
- (b) Cutaneous rash.
- (c) Kidney trouble, *e.g.*, albuminuria, dull aching pain in the loins.

- 2 When the patient cannot bear sandal-wood oil and balsam. and when there are signs of posterior urethritis, salicylic acid preparation is the best substitute.

Santyl (a combination of sandal-wood oil and salicylic acid) is recommended ; it is a colourless, tasteless and odourless fluid ; dose 10 to 15 drops thrice a day.

It is also sold in capsules.

3. Arhovin. It causes no digestive disturbance, no skin eruption, no irritation of the kidney.

Dose 4 to 6 capsules

The average duration of treatment of an acute attack is 30 days.

N B —No injection is necessary.

4. Arrheol capsule

Dose two twice a day

5. Gonosan capsule (containing 80 per cent. sandal-wood oil).

Dose two thrice a day , it should be taken with a little warm milk after meal

- 6 Santal Midy Capsule.

Dose two thrice a day.

7. When the disease has reached its height and is declining, give one palatinoid of Nesbit's specific with methelene blue every 2 hours, or palatinoid metramine co, thrice a day or methyloid capsule (*Stearn & Co*) thrice daily.

(b) Suppository of opium and belladonna

(c) Camphor monobromata gr. vi. Thrice a day.

(d) R

Pot. Bromide ʒ iiss-iv

Lupulin

Camphor aa gr. viii-xx

Mft. pulv. ; divide into 10 doses. Sig. one to be given two to three times a day.

3. Hæmaturia —

(a) R

Ergotin gr. $\frac{1}{4}$

Ferratin gr. j.

Ext Hyoscyamus gr. $\frac{1}{2}$

Mft. for a pill Sig. one thrice a day.

(b) Morphia hypodermically is recommended by some physicians.

4. Cystitis.—

(a) Urotropin gr v. in “Isapgool” water, or linseed water flavoured with rose water.

(b) Metramine palatinoid gr. v twice a day.

5. Epididymitis.—

Local compress of the saturated sol. of mag. sulph is highly recommended by the writer.

Local punctures have been advocated by some surgeons.

6 Arthritic Rheumatisms

Stop urethral injection if the patient is using it, place the joint on splint, and apply evaporating sedative lotion or mag sulph. solution, at the very onset of the disease

The following plan is recommended by the writer : —

Internally :—

(a) R

Sodii Iodide gr. v

Sodii Salicylas gr. iiii

Spt Ammon Aromatic m. xx

Acid Boric gr iiii

Tinc. Hyoscyamus m x

Liq. Santal flava cum buchu
et cubeb. (Hewlett) ʒ j

Mft. for a dose morning and evening with a glass of water.

(b) A dose of salol gr. iii with three ounces of col l linseed tea made from linseed and liquorice, twice a day

(c) If the fever be high and pain acute .

R

Antipyrine	gr. iii
Quinine Hydrobromate	gr. v

Mft. for a pulv. Sig. one twice a day during the decline of fever.

Externally :

(1) R

Iodipine 10 per cent	
Oleum Gau'theria	aa ʒ. ii
Lint Belladonna	
Lint Chloroform	aa ʒ. iv

Mft. first pour a few drops over the affected joint, then cover it with oiled silk till a prickly sensation is felt , take off the oiled silk, pour a few drops more, rub the joint gently followed by bandage

(ii) Of late years the method of producing passive hyperæmia introduced by Bier, has been largely employed as a therapeutic measure with apparently good results. In applying this to the knee, a flannel bandage is first placed on the foot and lower leg.

(*A System of Medicine by Osler and McCrae. Vol. iii. P. 108*)

7. Stricture —

In my college days Dr. O'Brien, the then first surgeon of the Medical College, Calcutta, used to say "Gonorrhœa is the disease of youth and the man will have its consequence in old age", by this he meant stricture.

(a) Hypodermic injection of fibrolysin gr. iii or thiosinamin gr iii is said to dissolve the cicatricial tissue of stricture.

(b) Four drachm Juice of Him-Sagar leaves (which is called Pathur-kuchi-Pata in Calcutta), three times a day for three weeks, is said to be efficacious.

Treatment of Gonorrhœal diathesis by antigonococci Serum —

It is one of the triumphs of modern medicine that the hitherto practically incurable gonorrhœal arthritis can now be conquered. Of course, we can't do miracle, in far advanced pathological changes which have been in existence for months or years, we can do very little, but the average case yields, in the majority of instances, to this method.

It gives good results in prostatitis and epididymitis.

It exercises little or no influence upon the urethral condition.

The dosage of gonococcic vaccine : —

A good working rule is to make the initial dose in indirect ratio to the severity of the symptoms. In other words the more acute the infection, the smaller the dose and the shorter the intervals between doses.

(*Therapeutic Gazette*, P. 315 May 1910)

Dietetic Treatment:—

Plenty of skimmed milk, bland liquids, *eg*, barley water "Issapgool" water, linseed water flavoured with rose water.

"Kotela" and pot. nitrates of ten grains each are to be dissolved in water and to be taken thrice a day, "Trifala" (the three myrobalans, "horitoki," "boira" and "amlaki" of each 30 grains) and pulv. cubeb grains 20 are to be soaked in a pint of water, filter it and divide it into 30 doses, sig. one thrice a day.

Avoid liquors, coitus, meat and other stimulating food, spices and acids.

Hygienic treatment —

Rest in bed : avoid exposure.

The patient should wash his hands with some antiseptic lotion each time he handles his penis, lest little indiscretion may lead to severe gonorrhœal ophthalmia.

The writer recommends the use of a plug of boric cotton to be suspended beneath the meatus to soak the pus if there be any. If the cloth be soiled with the pus it should be changed at once, he should imprint the motto in his mind "Cleanliness is next to Godliness"

SYPHILIS

From time immemorial it has been the practice of physicians to use mercury empirically in the treatment of Syphilis. Under this suppression plan severe secondary stages can be kept in abeyance. We introduce a metallic poison into the system to counter act the poison of Syphilis.

Spirochata pallida is now generally recognised as the exciting agency of Syphilis and the significance of Wassermann's reaction (Serum diagnosis), for establishing the presence of active Syphilis, is now scarcely disputed.

Experts are almost unanimous in regarding the specificity of this organism as a "probability bordering on certainty."

Castelli (*New York Med. Journal April 17, 1909*) lucidly explains the principle of the Wassermann reaction.

"Two bodies of colloidal nature having the property of binding together, have also the property of binding a third element"

Mercury exercises its specific influence during early and secondary stages while mercury and iodides do during the tertiary period.

Generally in a patient with an old lues the inhibition is not so intense as it is in a patient whose infection is more recent.

This phenomenon corresponds clinically to a well-known pathological axiom viz :—

"The virulence of a pathological process is in inverse proportion to its duration."

In 1889 Dr. Gowers in one of the Lettsomian Lectures stated :—

“ It is literally correct to say that we have no evidence that Syphilis is, or ever has been cured. ”

This remark was very much in accord with the dogma of Prof Ricord—

“ Once Syphilitic, always Syphilitic. ”

In answer to Dr. Gowers, Dr Henry Lee asks :—

“ Is there any constitutional disease which may not occasionally have consequence or sequelæ ? If not, it may be literally correct to say that we have no evidence that any disease is or ever has been cured. Syphilis is as amenable to treatment as any other disease. ”

If we can establish the fact that syphilis is curable and does not hang like the sword of Damocles over a man's physical and mental future, again will medicine have triumphed.

Lenses of cobalt blue glass are used as an aid in the diagnosis of the cutaneous lesions. What is aimed at is the absorption of those rays of harmful light which fatigue the retina without bringing to its notice any essential features *e. g.*, the red rays.

Broca claims the following result :—

- (1) The perception of an eruption before it is visible in the naked eye.
- (2) The displaying of traces of former eruptions.
- (3) The revelation of a latent eruption.

As “ all roads lead to Rome ”, so there exist various time-honoured methods of the use of mercury, all calculated to attain the same goal *viz* :—

- i. Vapour bath.
- ii. Inunction.
- iii. Sub-cutaneous or intramuscular injection.
- iv. Per mouth.

I. Vapour bath has been practised in more worst cases of Syphilis with eruptions, 20-30 grains of calomel are put in a cup placed over the flames of spirit lamp; have a kettle of boiling water on fire adjacent by. Put them under a perforated chair occupied by the patient being wrapped from neck to toe with a blanket for 30 minutes.

II Inunction half a dozen areas of skin, soft and thin, and covered with a minimum of hair, are selected and used consecutively for the reception of $\frac{1}{2}$ -1 drachm of Ung Hydrarg, once a day rubbed in gently but firmly for half an hour. A warm bath must precede the application, and special flannel clothing must be worn next the skin.

III. The subcutaneous injection of mercury introduced by Lewin and now practised to day may be more rapid in its action than mouth administration, but is painful and may cause mercurial poisoning

Injection of insoluble salts *e.g.*, calomel, salicylate of mercury is painful, injection of soluble salt, *e.g.*, sublimate, peptonate, albuminate, carbolate, iodotannate, arseniate, etc., is too mild.

These are the drawbacks of injection method.

Preparation of Insoluble Salts —

Dr. Ernest Eane (*The Clinical Journal June 29, 1910*) recommends calomel injecton $\frac{2}{3}$ gr suspended in sterilized olive oil or some similar vehicle, originally introduced by Lang of Vienna. A course of 12 injections given once a week is usually sufficient to clear up any urgent symptoms and to check the progress of any rapidly destructive lesion

Dr Macy Brooks in *Annals of Surgery, April 1910*, advocates the injection of salicylate of mercury.

R

Mercury Salicylate (Mercks)	1 part.
Liquid Albolene	5 parts

One minim of this solution = $\frac{1}{5}$ grain of mercury.

This solution is placed in one ounce bottles which are corked with sterile cotton, and placed in a water bath, the temperature gradually being raised to the boiling point and kept there for an hour. These bottles may then be corked with sterile corks, the necks dipped in paraffine, ready to be opened when needed.

Dr. Louis Gross on the other hand (*The Pacific Journal June 1910*) condemns the injection of *insoluble salts* as unscientific, mutilating, uncertain in effect, and more or less dangerous to health and even to life; with the insoluble agents absorption takes place slowly and progressively and from this there is always the danger of a cumulative intoxication. He recommends hypodermic injection of cacodylate of mercury $1/8$ grain in the gluteal region, thrice a week

N. B.—Injection of organic salts of arsenic. *e.g.*, Atoxyl Soamin, has been recommended in syphilis.

Hallopean employed 10 per cent. solution of atoxyl and injected from 0.75 to 0.5c. gram into the gluteal muscles three times a week. He recommends 5 to 9 injections

Its action is more active in malignant syphilis, in tertiary syphilis and when ordinary mercurial treatment has failed.

Lambkin recommends soamin injection of 10 grains every other day until a total of 100 grains has been given. It is used intramuscularly or subcutaneously

Arylarsonate salts (*e.g.* atoxyl, soamin) should not be given by mouth, as they are broken up by the acid contents of the stomach and thus more easily produce arsenical poisoning. They should not be used simultaneously with mercury as the mercury dissociates the ingredients of arylarsonate salts.

iv. Orally :—

1. Prof. Hutchinson recommends either of the following :—

(a)

R

Hydrarg. cum cretæ

Dover's Powder

aa gr. ij

Mft : for a pill or powder, to be taken thrice a day.

(b)

R

Hydrarg. tennate

gr. $1\frac{1}{2}$

Opium

gr. $1/12$

Mft : for a pill to be taken thrice a day

2. Palatinoid Hydrarg. cum cretæ, pulv Ipecam Co.,
and red marrow aa gr. j (*Oppenheimer & Sons*)
Dose thrice a day

3. Mergal capsules : it contains $\frac{3}{4}$ grain mercuric
chocolate and $1\frac{1}{2}$ grain albuminate of tannin.

Dose—Six capsules may be used *per diem* in any
ordinary case for 8 to 12 weeks without any
injurious influence of any kind.

The advantages are :—

- i. It is easily assimilable.
- ii. It does not irritate the alimentary canal.

4.

R

Proto-iodide of mercury

gr. $\frac{1}{8}$ — $\frac{3}{4}$

Opium

gr. $1/12$

Mft. for a pill: Sig. one twice a day.

5. Mercuriol (Nucleide of Mercury) is administered in
the treatment of syphilis.

Mercuriol tablet .1 grain each (*Park Davis & Co.*) is
given three times a day.

Treatment of Syphilis as carried out.

i. *In Wiesbaden.*

ii. *At Aix-La-Chapelle.*

1. *In Wiesbaden.*

The use of salt-containing warm spring and mercurial treatment.

Advantages :—

- a. A ready made double salt of sodium and mercury is formed in the body as the result of internal or external use of mercury and sodium chloride.
- b. This double salt circulates as such in the organism without entering into combination with the albumin.
- c. There is vigorous metabolism in the system

Griesinger states that in sailors who live on highly-salted food the use of calomel is followed by unusually powerful general effects. The well-known mildness of the effects of calomel in children is explained by the small amount of salt contained in their food.

Disadvantage :—

Salt stimulates the excretion of mercury which is not an important object to aim at.

(ii). *At Aix-La-Chapelle.*

The use of sulphur-water and mercurial treatment. The sulphur-water is used merely as an adjuvant to enhance the effect of the drug.

Disadvantage :—

That portion of the mercury which is converted into the sulphide is inert, but this does not happen to all the metal absorbed but only to a fraction of it.

During secondary and tertiary period the old combination of mercury and iodide is best —

1. Tabloid Hydrarg Perchloride gr. 1/16 et.

Pot. Iodide (B. W. & Co.) gr. v.

Dose :—One dissolved in a large wine glassful of water twice a day after meal.

2. The following are the favourite prescriptions of the writer :

(a) R

Liq : Hydrarg Perchloride	m xx
Pot. Iodide	gr. v.
Liq. Stillingia Co.	ʒ j
<i>(Mc. Dade's mixture.)</i>	
Ext. Sarsa Liq.	ʒ. ss
Dec Hemidesmus	ad ʒ j

Mft. for a dose : Sig : one twice a day

(b) R

Donovan's Sol.	m. v--x
Pot. Iodide	gr. ii--v
Syr. Trifolium Co.	ʒ. i
Ext. Glycyrrhizæ liq.	m. xv
Dec. Sarsa Co.	ad. ʒ. j

Mft. for a dose : One twice a day.

(c) R

Liq Auri et Hydrarg. bromide	m v
Liq. Auri et arsenic bromide	m. v
Tipospora (<i>Oppenheimer & Sons</i>)	ʒ. j

Mft. for a dose : Sig : one twice a day with an ounce of water after meal.

In this way we can push on till six months have elapsed from commencement of secondaries , by this time " the backbone of the disease has been broken." If the patients for some reasons or other are neglected, they are actually " abandoned to be devoured by the disease like fodder."

Dr. Pernet before the *Royal Society of Medicine*, 14th June 1910, remarks:—

"That syphilis should be treated for *at least* four years, vigorously during the first two, then less so for another two , after that the patient should have further courses of mercurial treatment at intervals "

In tertiary syphilis organic iodine preparations, *e. g.*, Iodipin, Iodalbin, Iodival and Sajodin, are free from undesirable by-effects and are therefore recommended.

- 1 Iodipin is a combination of Iodine and Sesame oil
iodipin tablet (*E. Merck*) is the best way of administering Iodine

Dose two tablets three times a day.

2. Iodalbin (Iodine in combination with albumin) is prepared by *Parke Davis & Co.*

The usual dose is five grains, preferably given in capsules and repeat three times a day. It contains 21.5 per cent. of Iodine. It is a reddish powder having a pleasant odour, it is insoluble in water.

3. Iodival (47 per cent. of Iodine) is prepared by *Knoll & Co.* One tablet contains 5 grains to be taken three times a day.

- 4 Sajodin contains 24.5 per cent. of iodine and 4.1 per cent. of calcium.

Sajodin (from Sapo and Iodine) is a colourless, odourless and tasteless powder.

Dose 15 grains three times a day one-half hour to an hour after meal

It is prepared by *Farben-fabriken & Co.*

N B—Toxin or Vaccine of Syphilitic Serum has afforded no results either in the sense of immunization or cure.

Levy-Bing recommends an ointment containing 10 per cent. of neosalvarsan in vaseline for the treatment of chancre. The applications are made daily after cleansing with boiled water. He reports quick cure by this method.—*Ex*

Treat the patient symptomatically.—

1 Eruptions:—

Wash the part with germicidal soap, then apply the following:—

(a) R

Hydrarg. oleatis 10 per cent	℥. j
"Fulal" oil	℥. ij

Mft. to be rubbed gently.

(b) The atoxylate of mercury cream (*Oppenheimer, Sons & Co. Ltd.*)

2. Ulcer —

After washing antiseptically apply the undermentioned ointment:—

R̄

Hydrarg. Ammoniata	gr x
Orphol	gr. xx
Xeroform	gr. xx
Ung. parafin	ad. ʒ. j.

N.B.—When dry dressing is required, dust with any of the following :—

1. Iodoform
2. Calomel and Emol Ketel Powder aa. ʒ. iv
3. Iodol
4. Aristol and Xeroform Powder aa. ʒ. ii
5. Formidine : (*P. D. & Co.*)
6. Sal-antisepticus : (*Huxley's.*)
7. Cyllin Surgical dusting powder

3 Rheumatism.—

R̄

Pot Iodide	gr. v
Pot. bicarb	gr. x
Syr. Trifolium Co.	ʒ j
Ext Sarsa liq.	ʒ ss
Ext. Cascara Sag. (evacuance)	m. xx
Dec. Sarsa Co	ad. ʒ. j

Mft. for a dose Sig. one twice a day.

4. Diarrhoea :—It is prevented by opium.

5 Salivation :—

- (a) Frequent cleaning of the teeth.
- (b) Use of alum mouth-wash.

6. Tumour Gumma. heroic doses of the organic preparations of iodine as mentioned above.

Antisymphilitic Vaccination .—

The method of prophylactic vaccination, although it is no Utopian scheme, offers at present little beyond the hope that the discovery of the causative organism of syphilis and the

increasing knowledge of experimental syphilis in animal may lead to useful development in serotherapeutics. The out-look as to the prophylaxis of syphilis by the serotherapeutic method is not, for several reasons, very good

(*A System of Medicine by Osler and Mc. Crae vol. iii page 501.*)

Since the days of Auzias Turenne numerous experiments have been carried out with a view of proving that syphilis is communicable to animals, but until recently it has been proved that syphilis is peculiar to the human race and apes ; other animals are immune of the disease.

The micro-organism of syphilis, presumably generates toxin which, circulating in the blood, produces the various manifestations of the disease , and since this blood when injected into animals produce no effect,, presumably such animals obtain their immunity through their blood containing some chemical or other substance , if their blood or blood-serum are transmitted to a syphilitic subject, the course of the disease shall be materially affected , hence the rationale of the procedure. (*The Practitioner, July 1901, page 77*)

Hygienic treatment —

Rest in bed is indispensable It is necessary to pay due attention to the hygiene of teeth and mouth in order to avoid stomatitis. The skin to be frequently attended to , slight alkaline baths are recommended throughout the treatment ; smoking to be prohibited , the patient should wear flannel next to the skin to avoid draught , he should carry out the treatment for 18 months with intermission , he should not use tonic, sea-bathing, out-door exercise, etc.

Dietetic treatment :—

All soaps, green vegetables, fruit and malt liquor should be strictly forbidden.

Avoid acids, spices, fatty compounds, alcohol, salads and pickles.

Good dried milk is recommended. Butcher's meat, eggs, fish, game poultry, light pudding and one or two pints of fresh milk daily may be used freely

A chart of syphilis has been interleaved

In conclusion one may add with Professor Fournier of Paris, in imitation of the proverb, "that the fear of the syphilis is the beginning of wisdom" and re-echo that fine thought of Pasteur's, "that where good is to be done, duty only ceases when we no longer have power to achieve more or to do better"

The Wassermann Reaction :—

It is now nearly twenty years since pathologists began to realize the value of the blood serum as an aid to diagnosis. In 1895 H E Durham discovered that immune serum could agglutinate bacteria

In 1906 Wassermann, or, more properly speaking, Wassermann, Neisser, and Bruck, first described a method of diagnosis of syphilis by means of the blood serum. This reaction occurred between the serum of syphilitics and a watery extract of syphilitic fetal liver. This fetal liver produces a *reaction of fixation* in the presence of syphilitic serum, but produces no such reaction with the serum of normal individuals or those suffering from other diseases

The Reaction of fixation —

Bordet and Gengou in 1901, five years previous to the description of the Wassermann reaction, found that when bacterial emulsions were injected into animals they were rendered immune to the particular bacteria used.

Bacterial emulsions were called *antigens*.

Animals injected with these antigens developed certain defensive bodies known as *anti-bodies* in their serum in the process of becoming immune.

Antigen = bacteria

Antibody = result of bacteria.

Complement is present in all normal blood serum, its office being to complete the action of what pathologists know as the *amboceptor*, so called because it has an affinity on the one end for antigen, and on the other end for complement.

The Principle of Hemolysis .—

Hemolysis is the power possessed by the serum of one species of animal to dissolve corpuscles of another species of animal. Hemolysis shows an absence of antibody in the serum of the patient, while absence of hemolysis shows the presence of specific substances, and therefore the presence of specific infection.

The Technique employed by Swift of the Carnegie Laboratory .—

Various materials used are :—

- (1.) Suspected serum obtained by venous puncture or from the finger or ear. The blood is allowed to clot, and the clear serum is removed, then heated to 56° C to destroy the complement.
- (2.) Complement of guinea pig serum.
- (3.) Antigen, alcoholic extract of fetal syphilitic liver.
- (4.) Red blood cells of a sheep or other animal, freed from complement by carefully washing with salt solution.
- (5.) Hemolysin, consisting of blood of the rabbit, the animal having been injected three or four times with the washed red blood cells of the sheep.

Two tubes with following contents are prepared :

Tube 1, antigen, extract of liver of syphilitic fetus, plus serum to be tested, plus complement of guinea pig serum.

Tube 2, red blood cells of sheep, plus hemolysin.

Contents of tube 1 are incubated for one hour, then added to tube 2, and then put in the ice chest over night and the results are read in the morning

If the serum from tube 1 had come from a syphilitic individual, its relation to the antigen would be a specific one, and complement would be absorbed thereby. So that when the contents of tubes 1 and 2 were mixed, no hemolysis would occur.

If the serum was not from a syphilitic individual, the complement would not be absorbed, but would remain active to cause hemolysis in tube 2.

Hemolysis as observed in the test tube is a tinging of the contents with a transparent red color, the red blood corpuscles being disintegrated and hemoglobin liberated. If hemolysis has not occurred, the red blood cells settle to the bottom of the tube

Diseases of the Internal Secretory Organs.

CHAPTER VIII.

Internal secretion is a subject on which we are still in the dark though there are plenty of hypothesis and speculation. The theory is that certain glands—both with and without ducts—secrete substances, which are absorbed into the blood or lymphatics, and have an important influence on the metabolism of the body.

Among the ductless glands one may specially mention the thyroid, the thymus, supra-renal, and pituitary bodies. The pancreas, kidneys and testicles among the glands have also excretory ducts.

The functions of ductless glands are more or less connected.

Prof. M. Sajous's theory :—

The thyroid (including the parathyroids), the pituitary, and the adrenals, are related as follows ;—

- 1- That the *secretions* of the thyroid and parathyroid, acting jointly, increase the vulnerability or sensitiveness of all tissue-cells, wastes, bacilli, toxins, etc., to oxidation, by a direct action on their phosphorus, thus constituting the substance now known under various names : "opsonin." "agglutinin" "precipitin," "sensibilisatrice," etc. :
2. That among the tissues thus sensitized is the governing centre of the adrenals which centre he has traced to the pituitary body ;
3. That the adrenal secretion carried to the lungs with the blood of the inferior vena cava, is the substance which takes up the oxygen of the air ;

4. That the adrenal secretion, when thus laden with oxygen, becomes the oxidizing constituent of the hæmoglobin which sustains the body-heat, metabolism and nutrition ,
 5. That the power of the blood to destroy bacteria, their toxins, toxic waste-products and other poisons corresponds with the proportion of thyroparathyroid and adrenal secretion it contains. In short the thyroid, the pituitary body, and the adrenals thus connected by nervepaths act jointly to enhance, when needed, general oxidation and produce a heretofore unexplained phenomenon, fever.
-

DISEASES OF THE THYROID GLANDS.

Goitre is the hypertrophied thyroid gland which occurs sporadically or endemically.

Goitres are produced by the obstruction of the lymphatic vessels of the thyroid, and that in many cases the colloid escapes by the blood-stream. In other cases, however, no alternative outlet is found, and in them the symptoms of myxœdema inevitably follow.

(*R. Murray, Clinical Med. July 28 1909.*)

Imbedded in thyroids or external to them are certain bodies called "Parathyroids" usually four in man and they are supposed to be essential for controlling the functions of thyroids.

Causes of endemic goitre:—

1. Impure water (*Water containing lime, snow water.*)
2. It is most common in certain part of Hymalayan districts especially amongst the aborigines.

Causes of sporadic goitre :—

1. Heredity.
2. Disturbances of sexual functions.
3. The active principle in the thyroid secretion is an albuminous compound containing iodide (*thyro-iodine*), and it is suggested that the cause of goitre may be the absence of iodine in the system and hence the compensating hypertrophy of the gland.

Treatment :—

Internally :—

R

Syrup ferri iodide ʒ. ss twice a day after meal.

Locally :—

The use of biniodide of mercury ointment followed by basking in the sun has been much praised by the writer.

EXOPHTHALMIC GOITRE.

(*Graves Disease.*)

Exophthalmic goitre is a disease characterised by enlargement of thyroid glands, protuberance of the eye balls, trachicardia, and tremors of the limbs ; in some cases there is more or less mental disturbance, wasting and irregular menstruation while in other cases there is anæmia, vomiting and diarrhœa.

The four cardinal symptoms are :—

1. Palpitation.
2. Tremors.
3. Unusual prominence of eye balls.
4. Thyroid enlargement.

Mœbius' theory :—

Graves' disease is caused by an intoxication due to an increased secretive activity of the thyroid gland ; the toxic products present can be neutralised by bodies produced by an organism deprived of its thyroid.

Treatment :—

Medical measures are notoriously uncertain. The use of thyroid extract has not been successful.

Antithyroidin Tablets : (Merck's).

1st to 3rd day	1 tablet 3 or 4 times a day.
4th to 5th „	2 tablets 3 times a day.
6th to 7th „	2 „ 4 „ „ „
8th to 9th „	2 „ 5 „ „ „

From the eleventh day a corresponding decrease is prescribed.

In anæmic cases.

R

Ferratin	gr. 11
Pulv digitalis	gr. $\frac{1}{4}$

Mft : for a pulv : Sig : to be put in a cachet and to be taken twice a day after meal.

If trachicardia :—

Tinc. strophanthus m. v. tabloid during palpitation.

The writer quotes opinions of some of the leading physicians of the day :—

1. Ergot to be pushed on carefully.
2. Belladonna gives relief, and shall be administered until the dryness of throat is obtained.
2. Ice bag over lower part of the neck and rest in bed are very useful.
4. Electricity has been much lauded.
5. Edmunds in *Lancet April 10, 1909* recommends milk of thyroidless goat in exophthalmic goitre.
6. Murray in *Lancet Feb, 24, 1912* recommends milk, dried blood and blood serum of thyroidless animals, especially of sheep and goats.

MYXŒDEMA.

Myxœdema like sporadic cretinism is a constitutional affection due to the loss of function of the thyroid gland, characterised *anatomically* by atrophy of the thyroid gland and *clinically* by a solid œdematous conditions of the sub-cutaneous tissues and mental failure.

For practical purposes the treatment is divided into three groups *viz* :—

- i. Medical.
- ii. Hygienic.
- iii. Dietetic.

i. Medical Treatment :—

The physician should bear in mind.

- a. To remove the myxœdematous condition, without producing undue or serious depression of the action of the heart and strength, and without producing acute thyroidism.

Thyroid Treatment:—

- 1. $\frac{1}{4}$ gr. of a sheep's fresh thyroid gland finely chopped up and concealed in wafer paper to be given once a day.
- 2. Thyroid extract tabloid gr. v. once a day to begin with till three can be tolerated without toxic symptoms.
- b. After the myxœdematous condition is removed, to keep the patient in good health and prevent the redevelopment of the symptoms.

To meet this demand one grain of thyroid tabloid every second or third day is quite sufficient.

Immediate effects of the treatment :—

The poor feeble-minded toad-like caricature of humanity may be restored to :—

- 1. Mental and bodily health.

The patient regains "his voice;" the sleepy feeling and lethargic condition disappear; the memory is regained.

2. Loss of weight is one of the first and most striking effects.
3. Disappearance of increased sensibility to cold is characteristic.
4. Altered appearance of the patient ; the patient will turn out a quite different man altogether.
5. Altered condition of the skin and its appendages. The patient gets a new skin in the course of a few weeks. The skin becomes moist, perspiration returns, desquamation of skin occurs especially on soles of feet.
6. Restoration of menstruation.
7. Urine is increased.
8. Pulse rate quickens.
9. Temperature rises.

Toxic effects:—

Rapid action of heart, palpitation, great prostration, profuse sweating, great and rapid loss of weight, anæmia, profound gastro intestinal disturbance (*furred tongue, vomiting, diarrhoea, pain and tenderness in the epigastric region*), headache, an excited hysterical condition etc.

Prevention of failure of heart :—

1. Brandy 2 ounces within 24 hours.
2. Liq : strychnine m. v. thrice a day.

Frouin (*Wien Med. Woch 1910. Page 361*) recommends calcium salts in myxœdema.

The free administration of calcium salts increases the elimination of the carbonic acid which is insufficiently eliminated as thyroid gland is out of order.

ii. Hygienic treatment :—

Patient should live in warm climate by sea side where temperature is even. Repeated warm baths with shampooing are useful. He should be kept in bed during first three or four weeks of thyroid treatment.

iii. Dietetic treatment.—

Milk diet during the first stage of the treatment; subsequently fish, white meat, bread, rice, vegetables and fruits are allowed.

ADDISON'S DISEASE.

Addison's Disease is a constitutional affection characterised *anatomically* by tuberculosis of the adrenals and associated disease of the abdominal sympathetic, and *clinically* by asthenia, depressed circulation, irritability of the stomach and pigmentation of the skin. The disease is caused by abolition of function of the suprarenal capsules.

Classical symptoms are.—

1. Anæmia.
2. General languor or debility.
3. Feebleness of heart's action.
4. Irritability of the stomach
5. Pigmentation of the skin especially of the mucous membrane.

The treatment is grouped under three divisions :—

- i. Medical.
 - ii. Hygienic.
 - iii. Dietetic.
- i. Medical Treatment.

In early stage of the disease :—

The physician should bear in mind the following points :—

1. To cure the tuberculous lesion of the capsules by anti-tubercle remedies.
2. To prevent gastro-intestinal irritations.
3. To use specific remedy.

Writer's favourite formula :—

Internally :—

Rx

Tinc. ferri per chloride	m. x.
Liq. arsenic hydroch	m. ii.
Liq. Strychnine hydroch	m. ii
Glycerine	m. xv
Aq. Chloroformi	ad. ʒ. j

Mtt. for a dose : Sig : one twice a day after meal.

Externally :—

Mild counter-irritation over the position of the suprarenal capsules is probably beneficial.

Specific treatment :—

Suprarenal substance may be prescribed in the shape of :—

- i. Raw gland finely minced in wafer paper.
- ii. Dry extract as tabloid or tablet.

Tabloid hemisine (1/200 gr.) one twice a day.

- iii. Liquid extract, *e.g.*, liq. adrenalin (1 in 1000) m. v.
or renaglandin m. v. twice day.

iv. The glands may be eaten cooked or glycerine extract may be used.

N. B.—The supra-renal extract seems to pass undestroyed through the stomach ; consequently the administration of the remedy by the mouth is preferable.

Function of adrenalin :—

(a) *Oliver and Schafer's view*—

That the adrenal secretion influences powerfully the tone of the heart and blood-vessels.

(b) *Langlois's demonstration*—

That it serves to neutralize certain products of metabolism.

(c) *Blum's observation*—

That adrenal preparation causes glycosuria.

(d) *Josue's view*—

That it can produce arterial sclerosis.

(e) *Sajou's theory*—

That the function of the adrenal secretion is to take up the oxygen of the air in the pulmonary alveoli, and to carry this gas to the tissues as a constituent of oxyhæmoglobin, and that as such, it is the adrenal secretion which, as far as the role of oxygen is concerned, sustains oxidation, metabolism and nutrition.

The toxic phenomena observed after excessive doses of adrenal preparation are due to some morbid process *i. e.*, excessive oxidation, the effects of which can be followed at every step. Tracing the course of events from start to finish we have, at first, the effects of exaggerated tissue metabolism: in the tissues, a *rise of temperature*, in the cerebro spinal system, *excitement*, in the muscles, *tremor*; in the kidneys *polyuria*, in the myocardium, *violent palpitations*: in the muscular coats of vessels, *rise of blood-pressures*. As the blood pressure increases, passive pulmonary congestion occurs, causing *dyspnœa*, and at times, *pulmonary œdema*. As the vascular constriction becomes still greater, the pressure in the aorta becomes so marked that *substernal pain* is experienced, and the pulmonary circulation being blocked, *asphyxia* follows—the heart, in most instances of poisoning, continuing to beat a short time after respiration has ceased. In cases of Addison's disease we have, besides, the transition from the hypothermia peculiar to this affection to a febrile state, the adrenal preparation having restored to the blood the principle which (because of lesions in the adrenals or their extrinsic nerve supply) was secreted in insufficient quantity to sustain metabolism, *i. e.*, the vital process. The danger lies, in these cases, in exciting *excessive* oxidation and tissue metabolism, thus causing such intense vaso-constriction that the resulting rise of blood-pressure is sufficient, as shown above, to endanger life itself.

In late stage of the disease :—

The patient should be strictly confined to bed, he should be warned against rising suddenly from the recumbent position and making any sudden effort, as the heart is remarkably feeble.

Treat the patient symptomatically—

1. Anæmia :—

Iron arsenic and strychnine, the formula of which is given above.

2 Diarrhœa —

℞

Styracol	gr. v
Bismuth Subgallate	gr. x

Mft. for a pulv. Sig : one thrice a day.

3. Irritability of stomach.—

(i) ℞

Creasotal	m. x
Pulv acacia qs.	
Aq. aurantii floris	ad. ʒ. j

Mft. for a dose : Sig. one twice a day.

(ii) Iced Champagne.

4. Constipation.—

(i) Regulation of diet.

(ii) Enema.

(iii) Small doses of mild laxative.

(iv) Cod Liver Oil.

N.B.—Avoid drastic purgatives.

5. Vomiting.—

Internally:—

℞

Acid Hydrocyanic (dil)	m. j
Bismuth Carb.	gr. v
Pulv. Tragacanth Co.	qs.
Aq. Cinnamomi	ad. ʒ. j

Mft. for a dose. Sig : one every three hours.

Locally :—

A mustard plaster over the pit of the stomach.

Hypodermically :—

Morphine Sulph gr. 1/12 tabloid.

N.B.—Dr. Anderson remarks :—

“Blisters over renal region, codliver oil with rest, good food and four ounces of wine daily.”

ii. Hygienic treatment.—

Rest in bed is indispensable : the patient should be well housed, well clothed and carefully fed. The open-air plan of treatment which is so successful in many cases of phthisis and other forms of tuberculous disease, will probably be found to be beneficial in cases of Addison's disease.

Patients affected with Addison's disease are very susceptible to cold, they require to be carefully protected from cold.

iii. Dietetic treatment.—

The diet should consist chiefly of milk, butter, eggs, farinaceous foods, fish and white meat ; many patients thrive best on a strict milk diet.

Well-cooked potatoes and tender well-cooked vegetables may be allowed unless they appear to disagree.

Small quantities of alcoholic stimulant seem, in many cases, more especially when the prostration and exhaustion are extreme, to be beneficial.

Patient has a distaste for red meat, an indication on the part of Nature should be borne in mind.

INFANTILISM.

Infantilism or persistent infant-like condition of a child is due to any cause *e.g.*

i. Sporadic cretinism.

ii. Rickets.

- iii. Deficient or defective pancreatic secretion
- iv. Inherited syphilis.
- v. Tubercle.

1. Sporadic cretinism is due to congenital absence or want of function of thyroid gland.

Classical symptoms are :—

- i. Stunted growth of the body, the growth of the trunks and limbs is not keeping pace with that of the head, hands and feet, *i.e.*, there is a great want of due proportion between the various parts of the body.
- ii. Imperfect development of the intellect.
- iii. Characteristic curvature of the lumbar spine "Lordosis," and thereby increasing the projection of the abdomen.

Prof. Osler remarks :—

"No type of human transformation is more distressing to look at than an aggravated case of cretinism. The stunted stature, the semi-bestial aspect, the blubber lips, retrousse nose sunken at the root, the wide open mouth, the lolling tongue, the small eyes half-closed with swollen lids, the stolid expressionless face, the squat figure, the muddy dry skin, combine to make the picture of what has been well-termed the 'pariah of nature'. Not the magic wand of Progress, nor the brave kiss of the daughter of Hippocrates has ever effected such a change as that which we are now enabled to make in these unfortunate victims, doomed heretofore to live in hopeless imbecility, an unspeakable affliction to their parents and to their relatives.

Treatment :—

Thyroid extract gr. iii to begin with twice a day, —

How does the thyroid gland wield its wonderful influence upon the metabolism of the body is still shrouded with obscurity.

Prof: Osler ("*Practice of Medicine*" 7th edition 1909, Page 771,) recommends thyroid extract the only curative remedy at our command.

The fact that the child loses in weight under its administration need not cause serious alarm.

Dt. Sajous ("*Internal Secretions*", 2nd edition, 1908) also advises thyroid extract.

One grain of desiccated extract of the thyroid gland of the sheep daily for three days, and the increase of the dose by one-half to one grain after every three-day period, watching the child carefully after each period for any untoward symptoms, until the child will get six grains daily in divided doses.

Stop the medicine if untoward effects such as violent headache and feeble action of the heart are observed.

The following is the quotation from the (*Monthly Cyclopædia and Medical Bulletin February 1909*) :—

The effects of thyroid extract in cretinism can now be accounted for notwithstanding their great number : The *rise of temperature* is due to increased oxidation brought about by the thyroid and adrenal oxidizing substances acting jointly : the *enhanced metabolism* is a normal result of the augmentation of general oxidation, while the *increased appetite* is due to the resulting greater demand for food stuffs. The marked improvement in *general nutrition* and *strength* is a self-evident result of the assimilation of a greater proportion of food materials, and the *rapid growth* likewise. The *cerebro-spinal system* is particularly influenced owing to its wealth in phosphorus, hence the *development of intelligence*. All organs being the seat of active metabolic activity and nutrition, the intestinal, renal, cardiac, cutaneous and hepatic functions are all enhanced. Even the hair grows bountifully not only in cretinisms, but when its loss is due to general adynamia. It counteracts *premature senility* in all its phases by restoring to the organism the one constituent which sustains the functional efficiency of all its parts.

Keep the bowels open and the skin active. Be sure to tone up the general condition, and watch the temperature,

which in these cases is almost always sub-normal. Take great care that the patient does not catch cold to which the child is particularly liable.

Ryman recommends in addition calcium iodide which has two fold benefit *viz.* : —

- (1) It gives iodine in an easily assimilated form.
- (ii) It supplies calcium in which the organism is deficient.

ii. **Rickets** is a disease of infancy affecting the nutrition and development of the whole of the growing organism more especially those of bones and teeth.

Causes of ricket :

1. Lack of sunshine.
2. Lack of fresh air.
3. Lack of exercise.
4. Insufficiency of calcium salt in the food
- 5 Toxæmia of microbic origin.

Preventive treatment .—

The surest safe-guard is the continuance of breast feeding alone for 9 or 10 months and the use of fresh milk as the chief article of diet until the end of the second year.

The addition of cream to the diluted milk is an important preventive measure.

Fresh air, sunshine, well ventilated room are good.

It is, properly speaking, a diet disease. It cannot be removed until general poverty is stamped out ; feed the infant with healthy human milk or ass's milk which closely resembles human milk in composition or albulactin milk. The addition of albulactin makes diluted cow's milk form exactly the same soft, fine easily absorbed curds, and behave in exactly the same way as human milk.

Albulactin (*pure soluble lactalbumin.*)

Prof. Bergell's analysis :

	Casein	Lactalbumin.
Human milk	·8 per cent.	·6 per cent.
* Cow's milk	2·7 to 3·0 per cent.	·2 to ·3 per cent.

“ Now for the first time ” writes Prof. Bergell of Berlin University, “ this deficiency can be rectified, because the albumin in soluble form as it exists in natural milk, can be obtained. The soluble albumin is called *Albulactin*.”

In diluting the cow's milk to make the casein contents correct this deficiency of lactalbumin is made still worse.

Albulactin is manufactured by Messrs. A. Wulff & Co. Failing these measures prescribe the following :—

Cow's milk one part, water four parts, add little barley; boil for 15 minutes; during the course of boiling the barley particles come in contact with milk corpuscles and mechanically break them into finer corpuscles like that of human milk.

If the child cannot digest cow's milk, add raw meat juice and cream to it. In early months of infancy farinaceous food should be withheld.

When the child is six months over malted food may be added to the milk.

When the child is one year old, bread and boiled milk should be the staple diet. When the child is between 12 and 18 months, bread, butter, yolk of egg, little fish and vegetables may be given in addition to milk

When two years of age, milk, pudding, jelly, cake may be added.

Fresh air and sunshine are absolutely indispensable. Dress the child properly with warm clothing.

Curative treatment :—

Treatment is essentially hygienic and chiefly dietetic :

Dietetic:—increase the nutritive value of diet—

- (i) of fat by the addition of cream, or, Cod liver oil.
- (ii) of proteid by the addition of Raw meat juice.
- (iii) of carbohydrate by the addition of malted food.

N. B. Sanatogen is an excellent adjuvant. Raw meat juice should be prepared by soaking finely minced beef in an equal quantity of cold water for half an hour and expressing all juice through fine muslin by twisting it.

Dose a teaspoonful : (*Allbutt's System of Medicine, Vol. iii page 137.*)

Dr. Ferrier points out that the reconstitution of the mineral elements of the tissues is greatly assisted by the observance of certain simple rules of diet. On the one hand, should be banished from the diet all acids and substances capable of giving rise to the formation of acids, such as wine, beer, cider, alcohol, and fats, while, on the other hand, lime is administered in the form of hypo-or glycono-phosphites and mineral waters rich in bicarbonate of lime, such as St. Galmier-Badoit, Pougues, St. Leger, and Chatelguyon-Gubler.

Medicinal, —

1. Cod liver oil in the form of Stearn's wine of cod liver oil.
2. Calcium glyconosph effervescence (Bishop's)
Dose 10 grains in water twice a day.
3. Glycerinum glyconosphatum cum medulla rubra.
(*Glycerol of Glyconosphates with red bone marrow*).
Dose 1 to 2 drachms.

Phosphorus has the reputation of consolidating new formation of bone. The writer prefers to administer phosphorus in organic form, as present in sanatogen, plasmon, yolk of egg, &c.

Massage the body with mustard oil.

Bathe him with tepid water.

Clothing should be according to the season.

Fresh air, light, and sunshine are, so to speak, the elixir of life.

Sea Water Injection.

The sea water must be collected not less than 20 miles from shores, in water not less than 10 meters deep. It must be collected in sterilized bottles and must be diluted with spring water in proportion of sea water 2 parts to fresh water

5 parts, free from bacteria. Thus a fluid isotonic with the blood is obtained which is termed "Sea water plasma." This must be filtered through a porcelain filter. A suitable apparatus has been provided for the injection of this plasma but it may be done by a hypodermic syringe and under surgical asepsis.

iii. Deficient or defective pancreatic secretion —

Classical symptoms are :

1. Growth and bodily development of the child have been arrested. A child of 8 or 9 years of age would appear like an infant of 4 or 5 years old.
2. Chronic diarrhoea.
3. Genitals quite infantile.

The rational plan of treatment would be—

- (i) to supply artificial pancreatic extracts ;
- (ii) to give food to the starving organs ,
- (a) Iron somatose
- (b) Calcium glycerophosph
- (c) Raw meat juice
- (d) Fruit juice

Of pancreatic preparations Savoy and Moore's Pancreatic Emulsion, or Benger's Liq. Pancreaticus acts admirably well : dose being a teaspoonful twice a day with milk, to be given 2 hours after food, with a little bicarbonate of soda to prevent its being rendered inactive by the acid stomach contents.

How to prepare milk ?

Mix a pint of milk with 5 ounces of water, heat to 140°F. and then add Liq. Pancreaticus (Benger's) 2 fl drachms , or Zymine (Fairchild's ext. pancreaticus) gr. v and sodium carbonate gr. xx ; leave the mixture at the ordinary temperature of room for 3 hours or if kept at about 135°F. for half an hour ; then heat for a moment to boiling point.

Dr. Young in the *Clinical Studies* Page 157 Vol 1, conducts a series of experiments to show that the pancreatic secretion is deficient or perhaps completely arrested

His research was conducted on three different lines

In the *first* place there is a considerable quantity of undigested fat in the stool, diarrhoea being due to defective pancreatic secretion.

Pancreatic extract was administered with the result that the amount of undigested fat in the stools became very much less, in fact practically disappeared.

In the *second* place, the patient was placed on milk diet. The caseinogen is broken up in the stomach in paranuclein and a proteid, paranuclein contains 4 per cent. of phosphorus and is insoluble, but when it comes in contact with the pancreatic juice, it is split into paranucleic acid and an albumose which is soluble. This is the source of phosphorus (Phosphoric Acid) in the urine

Dr Young found that the amount of phosphoric acid in the urine in this case, when the patient was taking a milk diet, was extremely small, but that during the administration of the glycerine extract of pancreas, the amount of phosphoric acid in the urine underwent a very marked and rapid increase

In the *third* place Prof Byram Bramwell administered test capsules containing iodoform surrounded by a glutoid substance which is insoluble in the gastric and intestinal secretions, but is soluble in the pancreatic secretion

Soon after the iodoform is set free by the solution of the capsule, iodine in the form of iodides and iodates may be demonstrated in the saliva by testing with chloroform and nitric acid, the nitric acid sets free the iodine which gives a pink colour to the chloroform. The test is a beautiful means of demonstrating—

- (i) The length of time that food (*i. e.*, the capsule) remains in the stomach.
- (ii) Whether the pancreatic secretion is active or not.

If no iodine reaction is obtained after the administration of the capsule, it may be concluded either that the capsule has not passed from the stomach or that the pancreatic secretion is in abeyance,

This is a proof that pancreatic secretion is defective.

The next step in the investigation was to administer a capsule along with food and then two hours afterwards to give a dose (2 drachms of pancreatic extract.)

Iodine can now be detected an hour after the pancreatic extract had been administered.

These three different experiments show that pancreatic secretion is either very defective or completely in abeyance.

iv. Inherited Syphilis:—

The child has an aged look ; for particulars *vide* my article on syphilis.

v Tubercular Diathesis —

The child is usually thin-built and is of sharp intellect. There are other signs and symptoms of tuberculosis : *vide* my article on *Tuberculosis*.

Diseases of the Nervous System.

CHAPTER IX.

HYSTERIA.

Hysteria is a chronic functional disorder characterised by nervous crisis of an emotional, convulsive or other nature and by an interparoxysmal state in which certain marks or stigma are present.

It is essentially a psychosis.

Lasegue remarks:—

“Hysteria is the basket into which we throw the papers which we do not know how to classify.”

Prof. Danna classifies it as Hysteria Minor or Hysteria Major.

Hysteria Minor is characterised by interparoxysmal condition of emotional weakness, nervousness, hyperæsthesia pain and by a crisis of an emotional character *e.g.* headache, spinal pain, hysterical globus, vasomotor instability as shown by flushing or coldness of extremities, and emotional crisis, *viz.*, cerebral automatism, somnambulism, vomiting.

Hysteria Major is characterised by interparoxysmal manifestations of anæsthesia, paralysis, contractures, tremors, peculiar mental conditions and by paroxysms of an emotional, convulsive, or other serious nature.

The crisis is first of an emotional outburst of crying or laughing, followed by motor disturbances *e.g.*, convulsions, hemiplegial paraplegia, &c

In short hysteria may be defined as a disease of psychical origin which is curable by psychical methods.

1. Psychical Method of Treatment :—

'Psycho-therapeutic' is a panacea of all the modern treatment of hysteria.

- (i) By suggestion in a waking state we fortify the patient's will-power and enable him or her to throw off the morbid ideas. Direct suggestion is most efficacious when it is made with quiet confidence in moderate and temperate language. The whole point in the treatment is to impress the patient with the belief that there is no organic lesion, that the condition is purely functional and therefore comes under the category of 'cure', and that he or she shall be cured within a least possible time provided he or she shall strictly follow the course of treatment prescribed.

The so called '*faith cure*' or '*charm cure*' has a grain of truth at its bottom. It stirs up patient's confidence, which if it once gains a footing on the treacherous soil of the hysterical mind, ends in cure.

Isolation, large quantities of milk, hypodermic injection of water, massage and electricity are merely means to an end

Prof Byrom Bramwell, M D, rightly remarks :—

“The isolation, hypodermic injection of water, are merely given with the object of impressing the patient that active treatment is being employed, and that, as the result of that treatment, a cure will be speedily and rapidly effected.

- (ii) *Hypnotic Suggestion*, though beneficial, is attended with draw-backs

Subconscious mind is the great healing power within ourselves and is almost wholly unknown to us

“The door of truth can not be opened by the key of prejudice.”

- (iii) *Freud's Method of Mental Catharsis* :—

The physician asks the patient to relate her story ; the patient usually experiences a marked sense of discomfort if asked to recall the past incidents The lapses of memory are the result of a mental process which he terms suppression.

As a motive for this suppression, the patient recognises feelings of aversion or dislike, resistance being offered to the memory-reproduction.

The occurrence of such resistance is one of the fundamental principles of Freud's theory. To sum up, the object of Freud's psycho analysis is to remove the gap of memory and to clear up all doubtful occurrences of the patient's psychic history, making subconscious factors accessible to consciousness.

2. Weir-Mitchell Method of Treatment :—

- (i) Removal from the conditions under which the disease is fostered.
- (ii) Isolation from sympathetic friends
- (iii) Forced feeding with milk and other easily assimilable foods.
- (iv) Massage.

3. Some leading physicians advocate 'Rest Cure' with isolation and massage
4. Hydro-therapeutics are recommended by the French Physicians. Cold douches are applied for 10, 15, or 25 minutes to the trunk and limbs, avoiding the head and any hyper-sensitive zones. The douche is to be followed by brisk friction.

Preventive Treatment —

With regard to the prevention of hysteria one potent factor, *viz* nervous heredity, is at present beyond the control of the physicians, but neurotic tendency may be minimised by a wise education and up-bringing

Neurotic children should be properly fed with phosphatic articles of diet from infancy upwards, should lead an open air life, and should abstain from luxuries and unwholesome stimulants of any kind.

In a happy circle of healthy companions, the seeds of hysteria do not grow apace.

Prof. Savill says :—

"Matrimony is a valuable adjuvant, as it gives to a young woman occupation, interests and responsibilities outside herself.

Music plays an important part in the role of nervous diseases.

"Music is the direct and immediate effect of the feeling of the moment that it is listened to, and this is seen in all individuals."

Digestion is favoured by introducing good music at banquets and other affairs.

The action of the heart is increased, blood-pressure is elevated or lowered, and changes in respiration are also observed,

Music seems to act best in those nervous disturbances in which tremblings and palpitations are the leading symptoms. It tends to regulate the flow of the blood through the brain and the action of the sounds on the mind tends to arouse certain sentiments which seem to have a special power. (*Monthly Cyclopædia and Medical Bulletin, September 1909.*)

Therapeutic of Faith —

Faith enables the mind to assume a state of complete composure—purely a mental condition, but that upon which hangs the individual's health and happiness to a very great degree.

It is something more than belief.

Faith—a state of mental composure—restores to the organs their proper function through the sympathetic nervous system, returns the equilibrium, builds up a wasted system and cures disease

Faith cannot be expected to cure in an instant the changes that has been working for months and perhaps years.

Faith is an adjunct to all treatment.

It is an established fact that the physicians must have the confidence of the patient to secure the best result from his treatment and without it he sometimes utterly fails

Faith is often sufficient in itself to effect a rapid cure of functional disorders, and often avert an acute infection.

Faith was found useful long before Mrs. Eddy ever rose from her bed of hysterical suffering to take upon herself the dispensing of Heavenly blessings and which will continue to be used by the regular physician when "*Science and Health*" has taken its place on the selves along with other worn out metaphysical teaching and obsolete philosophy.

How shall faith be administered? Probably the best vehicle is the personality of the physician.

Remember what St. Paul has remarked :—

"Faith is the substance of things hoped for, the evidence of things not seen."—(*Medical Brief, February 1910.*)

Medical treatment:—

To speak the truth, medicine has little action in this malady, but it should be used to usurp patient's confidence that something has been done to alleviate her sufferings.

The following are the favourite formulæ of the writer :—

I.

(i)

R

Auri Bromide Sal:	℥m. xv
(7 gr. to 7 dr of water.)	
Pot Bromide	℥. iv
Camphor Monobromata	gr. xxiv
Tinc: Sumbul	℥. ii
Aq: Chloroformi	ad ℥. viii

Mft. Put 12 marks: Sig: one thrice a day.

(ii)

R

Quinine Valerian	gr. iss
Ferri "	gr. iss
Zinc. "	gr. i
Ext. "	gr. i
Pil: aloe et asafœtida	gr. iss
"Salol coated."	

Mft. for a pill. Sig: one twice a day

(iii)

R.

Quinine Bromide	gr. iss
Ferri "	gr. ss
Zinc "	gr. ¼
Arsenic "	gr. 1/24
Pil; aloe et asafœtida	gr. iss
"Salol coated."	

Mft. for a pill. Sig. one twice a day.

(iv)

R

Methylene blue	gr. xii
Kaolin	gr. xxxii
(Silver coated)	

Mft. divide it into 12 pills; Sig. one twice a day.

N.B.—Tell the patient that the disease will be cured when urine becomes blue, to gain confidence.

- v. Tono-sumbul : dose a teaspoonful thrice a day.
2. Validol (*a combination of Valerianic Acid and Menthol*):
Dose m. v. in a drachm of Syr. auranti floris, twice a day.
3. Bromo-Validol tablets contain each 5 drops of Validol with 1 gramme of Sodium Bromide : Dose one thrice a day.

Treat the patient symptomatically:—

1. Fits —

- (a) Cold affusion on the face
- (b) Compress supra-orbital nerve where it emerges from the notch.
- (c) A sharp faradic current may be applied with a wire brush.
- (d) Pressure on antispasmodic zones, *e g.*, ovarian and epigastric regions, brings the crisis to an immediate termination.
- (e) Inhalation of ether, chloroform or amyl nitras are often successful in aborting the attack.

2. Pain :—

- (a) Friction with mustard oil.
- (b) Iodine painting.
- (c) Blister.
- (d) Antipyrine gr. v internally.

3. Anaesthesia —

Faradism with a wire brush is very efficacious.

4. Paralysis :

- (a) In milder form, faradism is good.
- (b) In obstinate and inveterate palsy, massage, passive movements and continual application of faradism are good.

5. Digestive troubles —

- (a) Dyspepsia—*asafoetida* is recommended.
- (b) Constipation—*aloe* and *strychnine* pills are good.

- (c) Vomiting—bromide and hydrocyanic acid in an effervescent form and rectal feeding in obstinate cases are recommended.
- (d) Hysterical "lock-jaw," dysphagia. &,—hypodermic injection of tabloid hypoder apomorphinæ hydrochloride gr $1/15$ is good, it makes the patient to vomit, being an indirect emetic; and thus removes the obstacle from the passage. The writer had the good fortune of treating a hysterical woman by the above-mentioned method when all other methods of opening her jaws were of no avail.

6. Hyperpyrexia.—Cold application over head is recommended.

Writer's favourite formula :—

R.

Tinc. Valerian ammoniata	
Tinc. Quinine	aa ʒ. ss
Liq. ammon citratis	ʒ. ij
Spt ammon aromatic	m. xv
Aq. chloroformi	ad. ʒ j

Mft. for a dose. Sig : one every 3 hours.

7. Insomnia:—Is diminished by massage, hypnotics as a rule should be avoided, Bromural gr. v. or chloral-amide gr. x. may be given.
8. Hiccup.—Pastena in *the Treatment*, January 1901, recommends ether narcosis, on recovering consciousness the hiccup disappears.

In obstinate cases the writer recommends twenty drops of iced distilled water to be injected into the diaphragm; the effect has been magical.

9. Aphonia.—Kebbell in *Lancet*, June, 1896, recommends the application of ethyl chloride to the nape of the neck to make a frozen patch sharp about the size of a shilling and also inhalation of ether.

M. Hunt in *the Treatment*, October 14, 1897 recommends voice training and breathing exercise in aphonia.

10 Hysterical globus:—Murrell (*in British Medical Journal April, 1893*), recommends oleum succini m.x-xx in capsule.

11. Hysteria with menopause—

Bornyval (*combination of borneol and valerianic acid*) is given in capsule on a full stomach.

It is an excellent cardiac sedative.

12. Retention of urine:—

R.

Tinc : Asafoetida	
„ Valerian	a.a. m. xxx
Inf: Buchu	ad. ʒ. j

Mft for a dose. Sig. one every 4 hours.

13. Headache:—

R.

Caffeinæ citras	3. ss
or	
Acetanilidum	gr. xv
Sodii Bromide	ʒ. v
Sodii Bicarb	
Acid Tartaric	a.a. ʒ. iiss

Mft. divide it into 10 powders : Sig. one in half a glass of water, and repeat in 6 hours if needed.

N.B.—To effervesce well the powders should be kept dry.

14 Contracture—

In mild cases massage on the limb and frequent passive extension are recommended.

In obstinate cases, where adhesions are formed, tenotomy under chloroform is recommended.

Dr. S. K. Mullick, M.D., in *Lancet October, 15, 1898*, advocated successfully the treatment of hysterical contraction by suggestion. The cure by simple suggestion must be carefully distinguished from hypnotism where there is a condition of trance produced.

Hypnotism produces serious neuropathic affections while suggestion is essentially the medicine of a morbid mind.

The obscuring veil of charlatanism and empiricism does not dim the effectiveness of suggestion, it shines in the broad daylight of science

Dietetic Treatment —

Milk and its derivatives, fruit juices, weak egg flip, iced champagne, and later light farinaceous diet are recommended.

NEURASTHENIA.

Neurasthenia is an irritable weakness of the nervous system which may arise from a great variety of causes, and may result in various symptoms of nervous, mental and physical insufficiency.

It is a condition of impaired nutrition of nervous system often with mental depression and unfitness for prolonged mental or physical work. A better definition would be, a debility of the nervous system, causing an inability or lessened desire to perform or attend to the various duties or occupations of the individual.

Professor Bartholow describes it as consisting "essentially in an exaggerated susceptibility to bodily impressions and false reasoning thereon"

Nervous system so to speak is the king of our body; a man of weak nerve is not only dejected, depressed and degenerated but is surely doomed to wreck in the battle of life.

The physician who regards neurasthenia as a sham complaint of patient's hallucination, should read Professor Horsley's chapter on neurasthenia. It is not only a frequent but an uniform and consistent malady.

Prof. Osler remarks :—

"Neurasthenia appears to be the expression of a morbid, unhealthy reaction to stimuli acting on the nervous centres which preside over the functions of organic life."

"Neurasthenia is often the product of stresses upon the functions of the mind."—*Allbutt's System of Med.* vol. viii page 135.

It is essentially a chronic disease and leads to a great deal of misery, but is never fatal excepting by suicide. It is curable provided a careful investigation is made, leading to the discovery of causes in operation. It may run for years.

Diagnosis —

Difficulty of diagnosis in the beginning of these cases is a serious handicap, so many phases may it assume, and so kalidoscopic may be the manifestations in every direction, that it is to be a constant effort not to become discouraged and give up the fight.

Prognosis .—

The prognosis depends chiefly on :

- (1.) Its previous duration.
- (2.) The removability of the cause
- (3.) The age of the patient, being more favourable in younger persons.

The patient who can lift his eyes to the future will recover, while he whose thoughts writhe in the past is on the broad road to lunacy or may drift into a condition of chronic invalidism or become the slaves to morphia or chloral.

Classical symptoms are —

1. Cerebral or mental symptoms

The characteristic feature of cerebral neurasthenia is the 'weary brain'; the sleep is disturbed by dreams, pupils are usually dilated; history of headache, vertigo, insomnia, a feeling of aversion to mental work.

Psychical symptoms are very characteristic.

Memory and power of concentrating thought are defective; neurasthenics are prone to exaggerate symptoms and are always on the look out for new ones; all sorts of mental fear possess them *e.g.* some are irritable, some gloomy, while others are melancholic.

2. Spinal and musculo-sensory symptoms :

e. g. restlessness, presence of knee jerk, weariness on least exertion, vague pains in the back and limbs, neuralgic pain, cutaneous hyperæsthesia and paræsthesia. ' There may be fine muscular tremor, sexual debility and nocturnal emission.

3. Cardio-vascular symptoms .—

e. g. causeless palpitation, irregular action of heart, pains in cardiac region.

Capillary pulse may be seen in the nails ; a characteristic symptom in some cases is the throbbing aorta. This "*preternatural pulsation in epigastrium*" as Allan Burns calls it may be extremely forcible and suggest the existence of abdominal aneurism.

4 Symptoms due to the disturbance of the vaso-motor sympathetic system —

e. g. long drawn sighs, attacks of flushing followed by shivering, a sense of " pins and needles " in the limbs, cold hands and feet, giddiness, &c.

5. Gastric symptoms.—

e. g. pains in the pit of stomach, acidity, bowels often capricious, *viz.* sometimes loose but often constipated.

Causes :—Hereditry plays an important part in the role of the disease. We do not all start in life with the same amount of nerve capital. Parents who have been the subjects of nervous complaints or of mental troubles, transmit to their children an organization which is defective in "*nerve force.*"

Such individuals start handicapped with a neuropathic predisposition, and furnish a considerable proportion of our neurasthenic parents. Or, as Von Geison puts it : "The potential energies of the higher constellations of their association centres have been squandered by their ancestors." Then there are forms of hereditary neuropathy, caused ,by

injury to the germ-plasm, derived from one or both of the parents, and as Osler euphoniously puts it : "So long as these individuals are content to transact a moderate business with their life capital, all may go well, but there is no reserve, and in the exigencies of modern life these small capitalists go under and come to us as bankrupts."

A sedentary indoor life in town and the rush and strain of modern civilisation favour the disease.

Wiederhold in *American Journal of Medical Science* March 1898 believes the cause of neurasthenia lies in deficient metabolism in the nervous system, slow blood changes and venous stasis, brought about through insufficient respiration and weak heart function.

As a result, there is oxygen hunger of the tissues of the nervous system which should be combated by direct oxygen inhalation.

The writer classifies the causes as follows :—

1. Toxæmic.—

(1) Internal : *e.g.*, dyspepsia, colitis, chronic constipation, pyorrhœa alveolaris.

It is a kind of "auto-intoxication."

Perverted metabolism is at the root of this mysterious malady.

(b) External *e.g.*, alcohol, morphia, codien etc.

2. Malnutrition —

e.g., after influenza, fever, deficient or defective food, severe prolonged pain, and excessive venery.

3. Emotoinal —

(a) Psychical, *e.g.*, grief, shock.

(b) Physical : *e.g.*, neurasthenia is chiefly fostered by weight or intensity of business.

Jackson remarks :—

When the expenditure of nerve force is greater than the daily income, physical bankruptcy, sooner or later, results."

4. Traumatic.—

e.g., railway and other accident.

5 Reflex causes.—

e.g., eye strain, floating kidney, cardiac pulmonary and any other local diseases. Constant irritations (*or better call it constant degree of slow shocks*) caused by hæmorrhoids, fissures, prolapse of rectum, etc., irritate the sympathetic and cerebro-spinal nerves of that organ and diminish the vitality (*auto-protective power*) of the patient.

The writer has treated patients who had become neurasthenics, and were cured when relieved of their troubles viz., hæmorrhoids, fissures.

6. Sexual.—

It is most incurable of all causes and is apt to end in chronic delusional mania. A medical friend consulted me that after an engagement, he has been often disturbed with pollutions even at the very sight of the bride—a habit quite foreign to him. He became melancholic and after repeated suggestions the writer managed to bring him round.

In many of the patients the suffering is genuine and is independent of moral degeneration, it has been sometimes endangered by the folly of his medical adviser or by the wiles of a quack. Examine urine carefully; it is often alkaline or neutral with phosphates or oxalates: the last portion of urine contains spermatozoa.

N, B.—It is an interesting point of contrast that neurasthenics tend to oxaluria *with very acid urine*, but to phosphaturia if the urine *is not very acid*.

Treatment—

The general principles of treatment are laid down by Purves Stewart :—

“Complete change of environment, physical and mental rest, simple and nutritious diet, careful attention to intestinal elimination, massage, baths and electricity,”

Mitchell Playfair's method works wonders : the four essentials of the Weir-Mitchell treatment, the four legs so to speak of the quadruped, are recommended by the writer :—

- i. *Prolonged rest in bed.*
- ii. *Isolation from the outside world with a specially chosen nurse as sole companion.*
- iii. *Systemic massage.*
- iv. *Full diet.*

The reader is reminded of the well-known Pflüger's law : "Weak irritation increases the irritability of the nerves ; medium, benefits the same : strong, decreases, and very strong, stops the irritability,"

For practical purposes treatment is grouped under the following headings :—

- i. Medical.
- ii. Moral.
- iii. Colour.
- iv. Music.
- v. Hygienic.
- vi. Dietetic.

i. Medical treatment —

Writer's favourite formulæ :—

i.

R

Auri bromide	gr. 1-24
Arsenic bromide	gr. 1-24
Ext. Nucis vomica	gr. $\frac{1}{4}$
Ext. Cascara sag	gr. j
Ext. Lupulin	gr. j

Mft. for a pill : Sig one thrice a day after meal.

- ii. Huxley's syrup with formates : or ten grammes of sodium, potassium and lithium formates combined are dissolved in 200 grammes of Syr ; of bitter orange peel.

R

Sodium formate	gram. iv
Pot. formate	gram. iv
Lithium formate	gram. ii
Syr auranti florid	gram 200

Dose—One tablespoonful with water thrice a day.

Formic acid has a tonic action both on unstriated and striated muscular fibres and thereby increases the muscular power ; moreover it is diuretic.

Phosphates replace in the tissue that amount of phosphorus which is lost by wear and tear of the system

Strychnine is a tonic to the digestive system more especially through nervous system

It stimulates the motor nerve cells of the spinal cord, cardiac motor ganglia, the respiratory vaso-motor centres in the medulla, and contracts the arteriols all over the body.

iii.

R

Ext. sumbul liq.	m. v
Ext. Kola liq.	m. xx
Ext. Cocoa liq.	m. xx
Ext. Damiana liq	m. xx

Mft for a dose to be diluted with an ounce of water twice a day after meal.

iv.

R

Sodii Cacodylate	gr. x
Syr Hemidesmus	$\frac{3}{4}$ v

Dose a teaspoonful in water thrice a day after meal.

Arsenic in the shape of sodium cacodylate is used. It is fixed on the tissues of the nervous system which in consequence becomes less irritable, and diminishes the tissue waste produced by nervous over-stimulation.

Some useful new preparations are mentioned below :—

- v. Sancey in *These de Lyon 1907* recommends Bornyval (borneol with valerianic acid) to be given in capsule on a full stomach.

vi. Trevisanello in *Gaz. deg. Osped* 1908 No. 17, speaks highly of neuriprin (an extract of cerebrum preserved with bromine) in severe cases of spinal and cerebral neurasthenia.

vii Bromipin (a compound of bromine with sesame oil)
Dose—2 to 4 drachms.

Treat the patient symptomatically

1. Cerebral cases :—

Bromide is our sheet anchor. The secret of success with the bromides is to use them in small doses and for a brief period of time.

The following combination acts well :—

R

Quinine Hydrobromide	gr. i
Acid Hydrobromic (dil)	m. v
Pot: Bromide	gr. x
Aq. Chloroformi	ad. ʒ. i

Mft. for a dose Sig. one every four hours.

When there is loss of memory, vertigo etc.

Tinc : Valerian ammoniata is recommended.

2. Cerebro-spinal cases :—

Glycerophosphates of sodium, calcium are good.

3. In cases of vaso-motor relaxation.

Ergot acts admirably well.

4. In cases of vaso-motor constriction.

Nitrites are said to be of use.

5. Atonic dyspepsia :—

Strychnine is an excellent drug in combination with alkaline gentian mixture.

6. Gastritis :—

Arsenic in the shape of liq. arsenicalis m. i to be gradually increased to m. v.

7 Gastric neurasthenia :—

(a) Use antiseptic in the shape of benzo-naphthol, salol etc.

(b)

℞

Zinc. phosphide	gr. ii
Zinc. Bromidegr	gr. xx
Zinc. Valerianate	gr. xx
Syr. Glucose q.s.	

Divide into 30 pills, Sig. one thrice a day.

8 Gastralgia.—

Opium is best

9 Mental agitation, mania.—

Hyoscine hydrobromate gr. 1/200 tabloid

10 Nervous pain

Phenacetin is recommended.

11. Pelvic irritation —

Camphor monobromata in suppository is an ideal method of administering the drug.

12 Insomnia —

(a) Dormiol (a combination of 1 molecule of chloral with 1 molecule of amylene hydrate)

Dose:—6 to 9 min. in capsule.

It is mixable in alcohol, ether and chloroform

It is soluble in equal parts of water.

(b) The following prescription has been used with gratifying results,

℞

Veronal	ʒ. ss
Trional	gr. xv
Tinct. vanillæ	m. viij
Alcoholis	ʒ. iss
Glycerini, q.s.	ad. ʒ. ij

Mft. Sig. Two teaspoonfuls in wine glass of water, to be repeated in half an hour, if necessary.

(c) D' Aulnay in *Treatment Nov. 11, 1897* claims the most efficacious method of treating insomnia by the wet pack.

13. Anæmia:—

In anæmia associated with neurasthenia “the patient lies in the vicious circle of a reduced activity of the respiratory centre due to the anæmia it should help to dispel.”—*Allbutt and Rolleston's System of Medicine Vol. v. P. 723.*

Iron and bromide of potass are good.

In neurasthenia when all sorts of iron preparations had been unavailing, the use of sanguinal in pills, thrice a day before meals, is recommended (*New York Medical Journal Feb. 8, 1896*). It improves the condition, sharpens appetite and enhances a blooming appearance.

14. Intestinal torpidity.

An abdominal belt should be worn.

15. Sexual debility.—

R

Zinc bromide	
Zinc. valerianate	
Zinc. oxide	aa. gr xv
Confec rosacæ	qs.

Divide it into 20 pills. Sig one an hour after breakfast or dinner, and another before retiring.

The writer recommends testicle of sheep or goat to be fried in “ghee.”

16. Impotence is the rule in neurasthenic.

The only rational treatment is abstinence.

ii. Moral treatment —

The success of cure largely depends upon the powers of suggestion, the moral ascendancy and the attractive manners of the attendant. When the mind is perturbed, the suggestion of friends of tact, decision, cheerfulness, and the opening out of new spheres of interest, are essential means of cure. It is subject to relapse; thence forward he knows how to husband his forces, and how to avert the early symptoms of relapse.

In the management of these cases, in my experience, the most difficult problem to overcome is the mental depression of the patient, and consequent discouragement of *will-power* and the difficulty of inducing them to help the cure by using it and to persevere in treatment. In no affection is absolute confidence in the physician more essential. Every case must be treated on its own merits. What will be beneficial in one case may prove very harmful in another.

N B.—It must be remembered that a neurasthenic patient is usually made worse by a determined effort to fight against the debility, whereas in hysteria such efforts are beneficial

iii. Colour treatment —

The following facts are taken from *La: Reven, Paris*.

- (a) Red is an excitant, it excites the nervous system.
- (b) Orange and yellow excite to a much less degree.
- (c) Violet, indigo and blue have calming effect. Blue light has a soothing and sedative action on the nervous system. Its anæsthetic property is not unknown to chromopathist, hence used in neuralgia.
- (d) Green conveys tranquil joy.

iv. Music treatment —

(*Vide my article on hysteria.*)

v. Hygienic treatment:

Complete physiological rest of the nervous system is of the greatest value.

Life in the fresh air, freedom from household and business cares, radical change of environment, mental diversion, and occupation along new lines, so as to get the patient, as it were, out of an old rut, are essential.

Hydro-therapeutic e.g., wet sheets, packs, douches and cold bath are of great value.

Turkish and warm baths allay irritability.

Electricity viz. faradic bath is good.

It soothes the nerves, brings sleep and improves the appetite.

As regards *exercise* walking is recommended.

The general consensus of opinion of those who have tried cycling as a hygienic exercise in neurasthenia, is one of enthusiastic approval.

Sea voyage is highly beneficial ; a trip to the hill is good.

Clifford Allburt on the other hand remarks :—

“Sea air is often irritating and bathing in the open sea is injurious”

vi. Dietetic treatment —

Patient as a rule shirks food :—hence forced feeding should be the rule, reduce starch and sugar, alcohol should be avoided, no malt liquor is allowed, a wine glass of mineral water early in the morning is very efficacious, take little or no fluid during meal.

Starr in *Medical Record*, vol. Lix. No. 19 thinks that neurasthenia is due to intestinal auto-intoxication and advises in general cream, soups, fish, meat, macaroni, rice and free drinking of water.

Avoid milk, eggs, meat soups, cheese, potatoes, beets tomatoes, alcohol and tea.

Dr. Upshur in *Charlotte Medical Journal*, June 1909, remarks :—

“The utmost care should be exercised in the matter of proper diet and sleep, procured by such means as do not risk the establishment of the drug habit and such diet as is nutritious and digestible, without being excitant of a lithæmic tendency.”

In conclusion the writer takes the liberty of quoting the advices of Drs. Zenner and Grasset.

Zenner in *Treatment*, August 11, 1898 says :—

- (1) to remove the causes *e.g.* alcohol, narcotics, tea, coffee, excesses of all kinds, overwork, worry and digestive disturbances,

(2) to secure adequate rest.

Exercise must never be carried to the extent of causing fatigue.

An important point of the treatment is the elimination of waste matters from the bowels, skin and kidneys. In this way auto-intoxication may be lessened, and, at any rate, normal metabolism is favoured. Water and laxatives are to be used freely. Diet should consist of meal, vegetables, fruit, milk and egg.

Grasset advises :—

In slight forms :—

Plenty of nourishing food, no mental work, bodily outdoor exercise, short of exercise, cold horizontal douche every morning for 20 to 30 seconds omitting the head, then dry friction and walking, the submersion on cold bath if douche is not available, general massage before dinner and the use of kola wine after meal are recommended.

In severe forms :—

Remove from sympathetic surroundings, absolute rest both physical and mental, hydropathic treatment, subsequently exercise in open air, methodical and passive massage, cautious electro-therapy, progressive over—nutrition beginning with milk, then eggs, minced raw meat and strychnine internally are recommended.

NEURALGIA.

Neuralgia may be defined as a paroxysmal pain along the course of some nerve or its branches.

Neuralgia is a frequent result of constipation. Loomis called it “a cry of the nerves for better blood.” It may occur in any part of the body.

In all cases try to ascertain the cause and remove the same if possible. The treatment resolves itself into :—

- I. Internal tonics and nerve sedatives.
- II. Local applications.

i. Internal tonics and nerve sedatives.

Rest in bed is indispensable ; warm baths are good. The writer recommends acid glycerophosph Co : drachm dose with a drop of liq. arsenic hydrochlor, twice a day after meal.

Bromides may be used when nervous system becomes irritable. Nervous excitants *e.g.*, strychnine, should be avoided when nervous system is exhausted. Alcohol as a rule, should be avoided. Seidlitz powder, cod liver oil, two to three pints of milk and plain food are to be used regularly.

When pain is the acute symptom.

1. Prof. Savill's prescription :—

R

Tinc. gelseminum	m. x
Antipyrine	gr. v
Ammon Bromide	gr. x
Aq : Chloroformi	ad. ʒ. ss

Mft. for a dose : Sig. one every 3 hours till relieved.

2. The writer's favourite combination :—

R

Phenacetin	gr. v
Caffeinæ citras	gr. i
Camphor Monobromata	gr. ii

Mft. for a pulv : Sig. one every three hours up to 3 or 4 powders.

3. Anti-Nervine : (a combination of Salicylic Acid 1 part, Acetanilide 2 parts, Ammon. Bromide 1 part.)

4. Exalgin : it is best ordered in alcoholic solution.

R

Exalgin	ʒ. i
Rum	
Aq.	a.a. ʒ. iii

Dose : a tablespoonful in water every 4 hours.

ii. Local Application.—

1. Paint the affected part with the following .—

℞

Chloral hydras

Camphor

a.a. ʒ. ii

2 Small compresses wet with guaiacol and applied over painful spots, afford immediate relief (*Treatment, October, 14 1897*).

3. In the *Practitioner, August 1896*, the following prescription is highly recommended :—

℞

Aconitina

gr. i

Veratrine

gr. vi

Amyl. hydrate

ʒ. i

Collodion B. P.

ʒ. i

Mft. The mixture forms a colloid which should be brushed over the painful part 5 or 6 times a day forming successive films.

4. Writer's formulæ :—

(a)

℞

Tinc. Aconite

ʒ. i

Camphor

ʒ. ii

Chloroform

ʒ. ii

Menthol

ʒ. ii

Eau de Cologne

ʒ. vi

Mft. Apply with a pencil of cotton over the painful part followed by rapid fanning.

(b)

℞

Oil Cinnamon

m. x

Oil Gaultheria

ʒ. i

Menthol

ʒ. i

Camphor

ʒ. i

Eau de Cologne

ʒ. ii

Mft : Direction for use as mentioned above.

5. *L. Union Medicale*, June 4, 1892, published the following combination :—

R.

Chloroform	℥. vi
Sulphuric ether	℥. i
Spt. Camphor	℥. iii
Tinc. opii	℥. iss

Mft. Soak a small piece of flannel with the liniment and apply over the painful part.

6. The writer strongly recommends the local application of sol. adrenalin (*1 in 1000*) *P. D. & Co.* along the course of the nerve, it affords ready relief when other medicines have failed.
7. Buxbaum recommends *hydrotherapeutic treatment*, the patient is exposed to alternating douches of hot and cold water applied to the painful area.
8. Dawson Turner, in *British Medical Journal* April 4, 1908, advocates the use of kataphoresis or electric osmosis of a Salicylic "Ion" (applied on the negative pole) or of a Quinine "Ion" (applied on the positive pole) over the painful area, being careful to avoid abrupt changes in the strength of the galvanic current.
9. Weak electric current is very useful. Place the positive pole on the seat of pain and the negative Pole anywhere. The pain increases at first, but diminishes after a few minutes (Savill).

The action is analogous to and equal to the mechanical percussion (Gowers).

10. Durand (*Jour. de Med.*) recommends :—

R.

Veratrine	
Morphine Hydroch	aa. 0·1 gramme
Ung. aq rose	0·5 gramme

Mft. Ung. apply a very small portion to the painful area with slight friction once or twice a day.

Varieties of Neuralgia.—

1. Neuralgia Gastric.
2. „ Facial.
3. „ Intercostal.
4. „ Sciatic.
5. „ Ovarian.
6. „ Uterine.
7. „ Coccydynial.
8. „ Renal.
9. „ Vesical,
10. „ Cardiac.
11. „ Mammary.
12. „ Bronchial.
13. „ Cervico-occipital
14. „ Metatarsal.
15. „ Articular
16. „ Supra-orbital.
17. „ Ocular.

1. Gastric Neuralgia . See my article on Gastralgia.

2. Facial Neuralgia (*Tic Douloureux*):

Internally :—

(a) In malarial cases, large doses of quinine hydrobromate.

(b) In rheumatic cases, salicylates.

Butyl chloral hydras has a sedative action on the facial neuralgia and so also gelseminum. (Lauder Brunton.)

Tabloid butyl chloral hydras et gelseminæ acts admirably well in early stages of the disease.

Prof. Horsley states that if gelseminum be pushed to produce its toxic effects (one drachm of tinc. gelseminum) every 2 hours, the patient is relieved even in the later stages.

Locally :—

(a) Application of ethyl chloride spray is beneficial.

(b) Chloral and camphor equal parts are to be rubbed rupee size over the seat of pain.

N B.—In each case the skin of face should be first protected with a thin layer of grease.

Injection method :—

Dr. Schloesser advocates the use of 80 per cent. alcohol injection in neuralgia, especially in *Tic Douloureux* and recommends to inject with certainty into the trunk of the three branches of 5th nerve or into its roots. To hit the nerve with certainty, the author advises injecting into the foramina through which different branches enter the face from the skull, *i.e.*, for the 1st branch the supraorbital foramen, for the 2nd branch infra-orbital foramen, and for the 3rd branch inferior dental (mandibular) foramen.

The number of injections necessary varies from 2 to 10 : 3 on the average. The amount of 80 per cent. alcohol injected is from 1 c.c. to 4 c.c.

Dr. Harris recommends 15 to 20 minims of 80 per cent. alcohol injected slowly, a few drops at a time.

Surgical treatment :—

If relief is not obtained, the gasserian ganglion operation may be performed.

3. Intercostal neuralgia —

Counter irritation. *e.g.*, fly blister, mustard, &c., is of great value.

Huxley's menthol et wintergreen cream affords ready relief.

Remove the cause if possible ; *e.g.*, a callus pressing on the nerve should be operated.

Desplats and other continental physicians recommend subcutaneous injections of air.

Injection of air beneath the skin in the vicinity of the affected nerve, gives relief from the pain at once or after a brief delay, a quarter to half a litre should be slowly injected; this takes 8 or 10 days to be absorbed.

4. Neuralgia of Sciatic Nerve (*Sciatica*.)*Internally :—*

(a) In rheumatic cases, salicylates.

(b) In gouty cases, colchicum and salicin.

(c) In malarial cases, quinine.

(d) In diabetic cases, opium.

N B —During convalescence, Iron and Arsenic are good

Locally :—

Rest is indispensable.

i. Counter-irritation *e.g.*, fly blister over seat of pain.

Oppenheim considers cauterization the “ best remedy in old and severe cases.”

(*Diseases of the nervous system. Mayer's translation page 384.*)

ii. Carbolic acid to be touched quarter of an inch apart along the course of the nerve.

iii. Hot baths followed by flannel trouser.

iv. High current electric wave is of much benefit

v. Bandage the affected limb with flower of sulphur for three days.

vi. Dr. M. Orb. (*Transaction of the Royal Academy of Medicine in Ireland, vol xxviii 1910.*), recommends wet packs on the hip and leg made with linen or silk bandages wrung out in water of 60° to 70°, F, and covered with a double layer of flannel. They get warm very soon, and reduce the pains remarkably well. Renew these packs every three hours.

vii. Massage with pure warm mustard oil for half an hour is recommended by the writer.

Lotion.

Glycosal	℥. v to ℥. j
Glycerine	℥. iiss to ℥. v
Spirit. rec.	ad. ℥. iv

Mft. Sig. To be applied with a brush or as a compress. After applications cover the affected parts with cotton wool and an oiled silk dressing.

viii. *Hypodermically :—*

(a) Cocaine hydrochlor. gr. $\frac{1}{4}$ – $\frac{1}{2}$.

(b) Morphine Sulph. gr. $\frac{1}{4}$ – $\frac{1}{2}$.

(c) Injection of 15-20 drops of distilled water into the nerve.

(d) Acu-puncture may be tried.

(e) Injection of 20c.c. of saline solution.

ix. Shoemaker recommends Adrenalin ointment to be rubbed well over the course of nerve (*Monthly Cyclopaedia and Medical Bulletin*).

Castro (*Revist de Med. Cirugia practicas*, November, 1898, page 198).—A curious treatment of sciatica is advocated in this paper namely, cauterisation of the helix of the ear of the opposite side. It was suggested to Dr. Castro by a patient who had heard of it as successful in veterinary practice, and after a search through medical literature, in which he discovered allusions to such a treatment by a few writers (Grisolle, Soulier), he felt justified in putting it to the proof. Very remarkable success was obtained in a series of cases, of which four are quoted, showing that patient who had been martyrs to sciatica for long spaces of time and had exhausted all recognised methods of treatment, were almost instantaneously relieved by this simple means. Patients who had been incapable of ever standing alone were able immediately after the application of the cautery to walk from the room. In one case a recurrence of pain in the opposite leg to that first affected was cured by cautery of the other ear. The author admits that he can give no explanation of the cure effected. The operation was apparently performed without an anæsthetic, the thermo-cautery being employed, heated to a white heat; a single incision was made through the central part of the cartilage of the helix, and an antiseptic dressing was afterwards applied.

5 Ovarian Neuralgia :—

Ammon Chloride acts well.

6. Uterine Neuralgia .—

Ammon Bromide with uterine sedatives is recommended.

7 Coccydynial Neuralgia :—

Laxative, hot-bath and sedative application are good.

8. Renal Neuralgia .—

Hot fomentation, belladonna application and nervine sedative are recommended.

9. Vesical Neuralgia .—

Remove the cause if possible , hot fomentation and internal administration of hyoscyamus are good.

10. Cardiac Neuralgia :—(*angina pectoris*) :—

Inhalation of Amyl Nitris affords ready relief.

11. Mammary Neuralgia —(*Mastodynia*)

Support the breast by a bandage. Apply soothing liniment or poultices of castor leaves, and paint the nipple with a strong solution of cocaine hydroch.

Excessive lactation should be stopped.

Drop dose of tinc. phytolacca is recommended in *Medical Annual*, 1896.

12. Bronchial Neuralgia :—

Treat the cause , local sedative or counter-irritation is good.

13. Cervico Occipital Neuralgia —

Phenacetin gr. v. acts admirably well.

The writer recommends the following :—

Rx

Lint aconite	
„ Belladonna	
„ Chloroform	
„ Menthol	a.a. ʒ. ii

Mft. to be rubbed over the seat of pain.

14 Metatarsal Neuralgia —

Broad shoe to prevent pressure over the heads of the metatarsal bones is recommended.

15. Articular Neuralgia—

Paint the part with guaiacol, if too strong dilute it with glycerine.

16. Supra-orbital Neuralgia:—

Salophen acts well

17. Ocular Neuralgia.—

Norbury recommends for pain along the eye not associated with any inflammatory condition of the organ, the following counter-irritants:—

℞	
Menthol	gr. xxx
Spt. Rosemary	
Spt. Lavandulæ	
Vini Gallici	aa ʒ. i

Mft. to bathe the forehead and temple briskly.

The writer takes the liberty of publishing in synopsis the advices of some of the leading physicians of the age —

Taylor:—

℞	
Acetanilidum	gr. iiii—viii
Caffeinæ citras	gr. ii
Every 20 minutes till relieved.	

℞	
Ammon chloride	gr. xv—xx
Thrice a day.	

Murrell:—

℞	
Butyl chloral hydras	gr. v
Gelsemium	gr 1/200

Three times a day.

Hirt:—

Strong cutaneous faradization by brush.

Trousseau:—

Ext. belladonna gr. $\frac{1}{2}$ every hour until dizzy then diminish the dose and continue for several days.

Gowers :—

Hypodermic injection into the seat of pain

(1) Morphine gr. $\frac{1}{2}$ and atropine gr. $\frac{1}{100}$

Sulph tabloid

(2) Cocaine hydroch, tabloid gr. $\frac{1}{2}$ —1

(3) Gelseminæ gr. $\frac{1}{200}$

Sequin :—

Rx

Aconitina gr. $\frac{1}{160}$ — $\frac{1}{60}$

Glycerine

Alcohol aa m. iv

Aq. Menth pip. ad. $\frac{3}{4}$ ss

Mft for a dose. Sig. one before meal thrice a day.

Ringer :—

Paint oil Menth pip

or

Morphine oleatis gr. ss

Oil Menth pip $\frac{3}{4}$ i

Shoemaker :—

1. Ammon Valerianate

or Zinc. Valerianate in gr. xx dose

2 Local application.

Rx

Morphine Sulph gr. xx

Chloral hydras

Camphor aa. $\frac{3}{4}$ i

Mayer :—

Castor oil 1-2 oz. dose every morning till the pain is relieved. This ceases to purge after a few doses. It should be given in foaming ale or Essence of Anisi.

Thornton :—

Rx

Menthol gr. x

Alcohol $\frac{3}{4}$ i

To paint locally.

Hamen :—

Spray of ether.

Gross :—

℞

Quinine Sulph	gr. ii
Morphine Sulph	gr 1/20
Strychnine Sulph	gr. 1/30
Arsenious Acid	gr. 1/120
Ext. Aconite	gr. $\frac{1}{2}$

Mft. for a pill Sig thrice a day.

Baltimore :—

℞

Chloroform.	
Tinc. Aconite	aa. ʒ. ii
Lint Saponis	ʒ. iij

To apply locally.

Dana :—"In obscure cases."

1. Hypodermic injection of Strychnine gr. 1/30 till physiological symptoms ensue.
2. Rest in bed.
3. Liquid or semi liquid diet.
4. Much fluid to drink.
5. Pot : Iodide and Iron (big dose) as tonic.

Guthrie Rankin :—

(a)

℞

Ammon Chloride	gr. xv.
Phenacetin	gr. x
Codeia	gr. $\frac{1}{2}$

Mft. to be dispensed either in the form of a powder or of two cachets: one every 2 hours for three doses.

(b)

℞

Antipyrine	gr. x
Sodii : Salicylas	gr. x
Tinc : Gelseminum	m. xv
Spt. Chloroformi	m. xx
Aq :	ad. ʒ i

Mft. for a dose. Sig. one every 2 hours for three doses.

(c)

R

Heroin Hydroch	gr. 1/12
Acid Hydrobromic (Dil)	m. xxx
Caffeinæ citras	gr. v
Tinc Cardamoni Co	m. xx
Aq : Chloroformi	ad. 3 i

Mft. for a dose. Sig one every two hours for three doses.

(*The Clinical Journal July 27, 1910*)

EPILEPSY.

Epilepsy is a disease attended by sudden attacks of loss of consciousness with or without convulsions without any discernable cause in the blood or in the nervous system. For clinical purpose there are two forms of epilepsy *vis* :—

- (i) Petit Mal (*epilepsy minor*).
- (ii) Grand Mal (*epilepsy major*)

The former is a transitory disturbance of consciousness while the latter is characterised by convulsions with loss of consciousness.

All peripheral causes of irritation are to be removed as far as possible *vis* :—

- (i). Ocular ; remove eye-strain
- (ii). Auditory ; the removal of impacted wax in the right ear materially diminishes the attacks.
- (iii) Sexual ; especially in children, remove adherent prepuce or adherent chitoris.
- (iv). Urinary ; examination of the urine frequently reveals a large amount of indican, showing intestinal putrefaction, which should be corrected.
- (v). Intestinal ; in children worms may often act as an apparent exciting cause by irritating the anus ; hence the importance of examining the fæces.

- (vi). **Psychic**; keep the patient free from all excitement.

The treatment is divided into : -

- (a) *During an attack.*
(b) *Between the attacks*

A During an attack.

Place something between the teeth so that the patient may not cut his tongue.

The *status epilepticus* may be ameliorated by :—

1. Inhalation of amyl nitrite.
2. Inhalation of chloroform.
3. Enema of chloral hydrate.
4. Ice over the head and spine.
5. Warm wet compresses to be applied over the head and genitals.

B Between the attacks :—

1. Open bowels regularly by saline aperient
2. Bromide is the sheet anchor in the treatment of idiopathic epilepsy. Professor Gower recommends alkaline bromides of potassium, sodium and ammonium, in doses of half a drachm thrice a day.

Dr. Roche of Dublin prescribes strontium bromide gr. v-x. three times a day. The writer invariably uses Brown-Sequard's prescription with a little modification :—

R.

Pot. Bromide	gr. x
Sodii Bromide	gr. x
Ammon Bromide	gr. v
Stronti Bromide	gr. ij
Liq. Arsenicalis	m. iij
Inf. Adonis Vernalis folia* ad.	℥. j

Mft. for a dose. Sig. one thrice a day.

*To an ounce of boiling water, add 50 grains of Adonis Vernalis to make infusion.

The combination of four bromides in aerated water acts admirably well.

The object is to arrest the attacks and to afford stability, sufficient to resist an occasional exciting cause. Bromide weakens the functions of brain and of the general system, which depression of function is an inevitable concomitant of the process of cure.

Bromides are contra-indicated when,

- (i) Normal function of the brain is much depressed.
- (ii) Bromide rash appears.

The best preventive of rash is Fowler's solution, 5 minims to each scruple of bromides.

Gelineau's formula.

Rx

Pot. Bromide	1 gramme
Picrotoxin	$\frac{1}{2}$ milligramme
Arsenate of Antimony	$\frac{1}{2}$ milligramme

Mft. for a pill. Sig one twice a day after meal.

N. B.—It has been used extensively in France. In large doses picrotoxin is a producer of convulsions leading to spasms of a tetanic character, with death in coma. In small doses it is theoretically supposed to lessen the tendency to cerebral vasoconstriction, which is believed to be a fundamental factor in the causation of epileptic fits.

- 3 In cases where bromides partially or wholly fail, Dr. Gower recommends:

Rx.

Zinc. Lactate	gr. iv—viiij
Zinc. Citrate	gr. iv—viiij

Mft. for a powder. Sig. one thrice a day.

4.

Rx.

Biborate of Soda	grs. iv—x
------------------	-----------

Mft. for a powder Sig. one thrice a day.

The toxic symptoms of borax are :—

(1) Intestinal irritation,

(2) Typical psoriasis,

which rapidly pass off if arsenic be added.

5 If there be maniacal symptoms give hyoscine hydrobromate gr 1/100 tabloid.

6. Nitroglycerine is useful

(i) In children with frequent minor seizures.

(ii) Where there is vascular disturbance.

The following combination acts well.

R.

Sodium bromide	gr. xv
Acid hydrobromic (Dil)	m. xv
Liq. Trinitrin	m. j
Aq. Chloroformi	ad. ʒ. j

Mft. for a dose. Sig. One thrice a day.

Acid hydrobromic dil, is added to prevent decomposition.

7. For nocturnal epilepsy add digitalis to a single dose of bromide. (Prof. savill.)

8. Brometone gr. v. three times a day is said to be a specific.

9. Hesse recommends bromipin (a compound of bromine with sesamen oil). Dose 3 teaspoonfuls of 10 per cent. bromipin daily. The attack becomes milder and the mental condition of the patient is very much improved.

10. Maunier tried trional gr. x thrice a day.

11. Camphor monobromata and antipyrine are also excellent medicines.

12. Bromide of gold is said to act well. It can be used in the shape of Liq. auri et arsenic. bromide, m. v. thrice a day after meal.

13. Leon claims to have obtained most beneficial effects from the use of *Cerebrin* with bromides, and reduction of common salt in the diet.

14. Maurice de Fleury advocates the use of injections of serum. The serum is diuretic, relieves the arterial tension and is antitoxic.
15. John recommends calcium lactate gr. xv, three times a day. After three months treatment, the seizures of convulsions were much reduced.

Hypnotism .—

Epilepsy can be cured by hypnotic suggestion (*Allbutt's System of Med., vol. viii page 424*).

Dr. Sajous's theory :—

A common feature in all cases of epilepsy is (as Spitzka pointed out in 1881) "explosive activity of an unduly irritable vasomotor centre." and most neurologists regard epilepsy as a "functional vasomotor disease." Sajous reaches the fundamental conclusion, that we have as "the cause of convulsions a toxic spasmogenic agent in the blood capable of producing a high vascular tension and thereby excessive hyperæmia of the cortex. This hyperæmia is a recognized cause of the epileptic seizures; the exciting factor is a poison formed in the tissues, and our chief aim, therefore, should be to destroy that poison and to prevent its further formation. Not only do bromides not assist in this essential process, they hinder it; they act chiefly as depressants to the circulation, inducing lowered temperature, lowered oxidation, even asphyxia; further, they tend to paralyze the adrenal system whose efficiency is essential to the destruction and elimination of the toxics which induce the symptom-complex.

It is the adrenal secretion, which, Sajous has shown, takes up the oxygen of the air, passes it on to the tissues (as the albuminous constituent of the hæmoglobin) and sustains the whole process of oxidation, and also the antitoxic functions of the organism. Bromides and the whole group of depressants exert the effect of obtunding the sensitiveness of the centre which governs these all-important functions, hence they are directly contraindicated. As to the cure of the disease,

he insists on the use solely of *drugs which enhance oxidation, and, therefore, the antitoxic functions of the body*. He also holds that it is equally important to employ all those contributory measures which limit the production of irritating toxics from food, fatigue, etc., *e.g.*, the flesh foods which contain the most dangerous factors.

Dr. Sajous advised $1/30$ grain of calomel every three hours, and later $\frac{1}{4}$ grain doses of dessiccated thyroid, three times a day, also physiologic salt solution taken freely as beverage. The progress was steady and rapid. The thyroid was increased to $\frac{1}{2}$ grain dose, thrice daily and no more, and this again was gradually reduced as the convulsions grew rarer.

The simplifying influence of, Dr. Sajous's discoveries as to the functions of the ductless glands and other body structures is clearly shown. Epilepsy is due to the retention of excrementitious substances in the blood, and the irritating action of these poisons upon the spasmogenic centres—the indications, of course, being to destroy these poisons. Drugs known to do so by increasing the antitoxic substances through the ductless glands—mercury, and dessiccated thyroid—were administered. To assist this antitoxic process through the osmotic properties of the blood, physiologic saline solution was given as beverage. On the other hand, the sources of intoxication were as much as possible eliminated by purgation and dietetic measures calculated to prevent the accumulation in the blood stream of any toxic wastes, *i.e.*, wastes imperfectly prepared for prompt elimination by the kidneys.

Surgical treatment :—

Trephining the skull has been sometimes followed by cessation of the attacks but the effect has been seldom proved to be permanent.

Dietetic treatment .—

A factor of great importance in the treatment of epilepsy is the diet. All sorts of spices, coffee, tea, and particularly

alcoholic beverages, should be strictly prohibited. The diet should consist mainly of substances not likely to produce intestinal putrefaction. A milk-vegetable-and-egg diet is the ideal diet for an epileptic. All sorts of preserved foods should be avoided, first on account of the toxins they are likely to contain, and secondly, because of the presence of sodium chloride.

Plain food is best, food should be taken slowly and in small quantities. Meat is allowed with advantage in moderate quantity twice a day. Excess of animal food and salt should be avoided.

Haig strongly advocates a vegetarian diet with milk and its derivatives.

Prof. Balini's diet table is recommended by the writer :—

1-1½ litres of milk, 40-50 grains of butter, 3 eggs, 300-400 grains of bread and fruit.

Bread should be without salt, "*Salt starvation*" is the keynote of his dietetic treatment.

Hygienic treatment —

Irregularity in meals, over-strain in work and excitement of every kind should be carefully avoided ; exercise preferably walking is important , some body must sleep with the patient at night. Light education may go on without injury. Avoid crowded rooms.

The occupation should be one in which the attacks shall not involve personal danger to life *e.g.*, a sea life, work in a machinery.

Possible causes of reflex irritation should be removed.

Dr. Peterson recommends cold shower bath or cold sponge bath daily.

CHOREA.

Chorea is a disorder of the nervous system characterised by irregular involuntary and incoordinate movements of the limbs and a tendency to cardiac valvular disease.

Garrod in the (*Clinical Journal 16th October, 1907*) defines chorea as a disease within a disease.

It generally occurs in childhood.

Exciting causes :—

1. Long prepuce which demands operation.
2. Worms which require Santonin.
3. Rheumatism which needs Aspirin.

Varieties.—

1. Maniacal *i.e.*, mental excitement especially at night, delirium, hallucination.
2. Paralytic.
3. Chorea of adult life.
4. Senile Chorea.
5. Hereditary or Huntingdon's chorea.

Guthrie classifies Chorea under two divisions :—

1. The sthenic or explosive.
2. The Asthenic or pseudo-paralytic.

For the former group nervine sedatives *e.g.*, chloral, bromide are indicated, and for the latter, tonics like quinine, arsenic and strychnine are required.

Classical symptoms are :—

1. Character of movements :—rapid, irregular spasmodic and arrhythmical. Movements are independent of volition and take place when the patient is at rest and any effort to carry out voluntary movements increases the spasmodic movements.
2. Speech often indistinct and confused from irregular movements of lips and tongue.
3. A sucking movement of the lips is very characteristic.
4. Mental state is altered, temper is irritable, emotional outbursts are common.
5. Nocturnal enuresis.

For practical purposes the treatment is divided into four groups, *viz.*—

1. Medical.
2. Dietetic.
3. Hygienic.
4. Moral.

1. Medical treatment—

Treatment at the very early stage :—

Antipyrine grs. 3—5, thrice a day.

Treatment during late stage :—

Arsenic is our sheet anchor.

N.B.— If anæmia be present iron and arsenic are recommended.

Danger of arsenic :—

Stop the medicine when you notice any of the following signs or symptoms—

- (a) Puffiness of the eyelids.
- (b) Pain and uneasiness in stomach.
- (c) Albumin in urine.

It is an established fact that if arsenic is doing good in chorea, it will show its beneficial action within the first fortnight. When the remedy is doing good to the patient, continue it till he can walk along a straight line, and stand on the leg of the affected side with steadiness.

Gordon Sharp advises the following mixture, because it “washes the arsenic out of the tissues.”

R

Sodii bicarb	ʒ. ij
Tinc. capsici	m. xxv.
Ext. glycyrrhizæ fluid	ʒ. j
Aq. chloroformi	ʒ. vi
Aquæ	ad. ʒ. xii

Mft. Sig. one tablespoonful three times a day after meals.

(*The Therapeutic Gazette* June 15, 1910).

When arsenic has failed to do its work, the writer recommends camphor monobromate gr. 5 thrice a day. After sometime it should be stopped and arsenic substituted.

Dr. B. Bramwell in the *Clinical Medicine of October 30th* 1901, recommends quinine in rheumatic and septic cases along with arsenic.

Locally :—

1. Hot pack for several hours is very satisfactory in its result.
2. Warm bath at night may induce sleep.
3. Massage with lard or old ghee or "Mash oil" when there is much wasting.
4. A fly blister over the præcordial region.

The writer takes the liberty of recording some of the medicines lauded to be beneficial in this disease.

1. Chloretone :—it is a white crystalline body tasting of camphor, very slightly soluble in water, but easily in glycerine, petroleum and oil.

Dose :—3 to 10 grs. thrice a day to be dissolved in petroleum emulsion.

Dr. Essex Wynter, Physician to the Middlesex Hospital, London, contributes an important article to *The Polyclinic for July, 1909*, from which we abstract the following :—

"Taking them altogether, the average was nine days of chloretone administration in doses diminishing in quantity and frequency, some of the most favourable only requiring two days of 5 grains and two of 2½ grains given three times daily."

N B —Stop the medicine when there is erythematous rash or puffy eyelids.

2. Bromural grs. 5 thrice a day.
3. Trional grs. 5 twice a day.
4. Aspirin grs. 4 thrice a day in rheumatic cases.

In *The British Medical Journal* of 18th September Dr. Anderson describes a case of recurrent rheumatic chorea as follows :—

The treatment consisted of giving the patient 5 grs. of aspirin, increased in a few days to 10 grs, three times a day. The patient was not confined to bed, and in one month all traces of the condition had disappeared.

5. Exalgin grs. 2 twice a day.

6. Chloralamide.

Dr. Alt. reports that 15 grains of this drug, three times a day, had cured two cases of chorea within 5 days.

7. Hyoscine hydrobromate gr. 1/200 is occasionally beneficially to reduce tremors :

8. If there be much tremor occasional doses of the following is recommended :—

R

Chloral hydrate	gr. iiss.
Pot. bromide	gr. v
Syr. aurantii	ʒ. ss
Aq. aurantii floris	ad. ʒ. iv

Mft. for a dose. Sig. one when required.

During convalescence :—

1. Cold spinal bath or tepid sponging is beneficial.
2. Dr. Reuzi recommends ascending galvanic current along the spinal cord.
3. Systemic muscular exercise in some shape or other is good.

ii. Dietetic treatment —

Good nourishment is of cardinal importance, *viz.*, plain milk diet, eggs, broth, soups, &c.

Extract of malt is a valuable adjunct to the diet,

iii. Hygienic treatment :—

Rest both physical and mental is indispensable ; keep the patient in a dark room ; avoid all scolding ; give the child lots of amusing articles to play with and to be merry.

iv. Moral treatment :—

Mental telepathy is of highest importance. Try to infuse strong suggestions that the patient shall be cured, and the drugs prescribed will like a magician's charm, root out the disease within the shortest possible time.

PARALYSIS AGITANS.

(*Syn. Shaking palsy ; Parkinson's disease*).

Paralysis agitans is a slowly progressive nervous disease characterised by rhythmical tremors, weakness, muscular rigidity and a typical expression and attitude.

Gower speaks of it as "a true senile affection * * *

A failure of nutrition of special character in special structures."

The treatment is grouped under three headings :—

- i. Prophylactic.
- ii. Curative.
- iii. Palliative.

Prophylactic treatment :—

Mental worry and anxiety should be avoided, as they markedly increase the tremor. Patient should lead a quiet life and be spared, as much as possible, from mental excitement of all kinds. Wine or other alcoholic drinks, strong tea and coffee must be avoided. Patient's room should be well ventilated and he should spend as much as possible in the open air.

ii. Curative treatment :—

The disease, to tell the truth, is incurable and that nothing can be done except to attend to the physical comforts of the patient,

iii. Palliative treatment —

Internally:—

1. 5 to 10 drops of 25 per cent sol. of *Formic acid is said to be highly beneficial in this disease ; it lessens tremors, and is a powerful muscle stimulant.

The following preparations of formic acid are best :—

(a) Syr. acidi glycerophosphatis with formatis.

Dose a teaspoonful twice a day.

(b) Polyformiate syrup.

Dose a tablespoonful twice a day.

2. Hyoscine hydrobromate gr. 1/100 tabloid relieves rapidly tremor in all cases treated by the writer. In the "*New York Medical Journal*" October 11, 1890. Peterson recommends codien gr. 1/2—2 and hyoscine hydrobromate gr. 1/100 twice a day
3. Duboisine sulph gr. 1/64 twice a day when other medicines have failed.
4. In "*New York Medical Journal*" 15th April, 1893 Grasset and Sacaze recommend Sodium Borate grs. iv. four times a day, and gradually increasing the dose to two or three times as much.
5. In "*Med. Record*" November 9, 1907 W. N. Berkely thinks that this disease is dependent on functional insufficiency of the parathyroid glands.
6. Some physicians remark that ext. pituitary glands gr. xxx—XL daily quietens the system.
7. Gower recommends arsenic with opium and cannabis Indica.
8. The writer's favourite formula.

(a) Tabloid acid arsenious gr. 1/100.

* N.B.—Dr. Huchard in *Academy of Medicine Paris*, March 14th 1905 remarked "Formic acid increases muscular strength very markedly, even to the extent of five times over"

(b) Tabloid strychnine sulph gr. 1/60.

(c) Tabloid hyp. cocainæ-hydro gr. 1/10.

One of each with the following :—

Soak about 20 grains of cannabis indica (Indian hemp) in a cup of unboiled pure milk for six hours ; remove it after a thorough wash in milk ; the intoxicating properties of cannabis are dissolved in milk while the sedative and carminative properties remain in tact. Now rub the hemp into a paste and add half an ounce of rose water.

Directions for use :—

Three tabloids with the mixture of Cannabis twice a day half an hour after meal.

9. Taylor in "*Lancet March 27, 1909* recommends Hyoscine hydrobromate gr. 1/200 and a small dose of strychnine in acid mixture.

10 Bromide of uranium gr. 1/80 is said to be beneficial.

Hypodermically:—

1. M. Moretti in *Lancet December 19th, 1892*, recommends hypodermic injection of atropine gr. 1/60 dose once or twice a day.

2. In *Medical Record June 2nd, 1900*, Thelberg says the frequent insomnia which seems to be due to auto-intoxication can usually be relieved by a single dose of 1 c.c. of spermine given hypodermically.

Locally :—

Massage is good.

Charcot recommended electricity.

During convalescence general and nervine tonics *e.g.*, quinine arsenic and phosphates are recommended.

VERTIGO.

(*Giddiness.*)

Vertigo or dizziness is a word used to describe a paroxysmal condition in which a *sense of movement is experienced by patients* which may be real and may be described by patient,

- (i) As if the room and objects are moving in a particular direction (*objective*)
- (ii) As if the patient himself is folding in a certain direction (*subjective*).
- (iii) As if the patient and the objects around him are moving either in the same direction or in the opposite one.

Vertigo is caused by :—

- 1. Loss of muscular sense as in locomotor ataxia.
- 2. Disease of cerebrum (*cerebral vertigo*).
- 3. Disease of cerebellum (*cerebellar vertigo*).
- 4. Disease of semicircular canal (*auditory vertigo*).
- 5. Partial paralysis of ocular muscles (*ocular vertigo*).
- 6. Disease of gastro-intestinal tract (*gastric vertigo*).
- 7. Arterio-sclerosis.
- 8. Toxic substances e.g., alcohol, tobacco (*External.*)
gout, syphilis (*Internal*).

Symptoms of auditory vertigo (*Meniere's disease*).

i. During, an attack :—

A feeling of giddiness and a tendency to fall down with nausea and vomiting. There are no loss of consciousness, no convulsions, etc.

ii. Between the attacks :—

- (a) Tinnitus.
- (b) Deafness.

636 DISEASES OF THE NERVOUS SYSTEM.

Treatment —

Try to find out the cause and to lay the axe at the root of the disease.

Treatment during an attack —

Rest in horizontal position is recommended.

R

Pot. Bromide	gr. xx
Tinc. Belladonna	m. v
Spt. Etheris Co.	m. xv
Aq. Chloroformi	ad. ℥. i

Mft. for a dose Sig. one every 2 hours up to 3 doses.

Treatment between the attacks .—

1. In ataxic case treat the disease.
- 2 & 3. In cerebral and cerebellar disease big doses of iodide are recommended by the writer.
4. In auditory cases.

R

Quinine hydrobromide	gr. ii
Acid hydrobromic (Dil)	m. x. v
Aq. Chloroformi	ad. ℥. i

Mft. for a dose. Sig. one twice a day.

5. In ocular cases proper glasses will rectify the disease.
 6. In gastric vertigo saline laxatives and bitter acid tonics are good.
 7. In arterio-sclerosis potassium Iodide with nitroglycerine are efficacious.
 8. In toxic cases try to remove the cause if possible.
-

PERIPHERAL OR MULTIPLE NEURITIS.

Peripheral Neuritis means inflammation of the peripheral nerve fibres.

Classical symptoms —

1. Pain and tenderness in legs and feet.
2. History of a few days pyrexia.
3. Gradual development of paralysis in upper and lower extremities with simultaneous atrophy.
4. “*Steppage gait.*” The foot is thrown forcibly forward, the toe lifted high in the air so as not to trip upon it ; the heel is brought down first and then the entire foot.
5. Foot and wrist drop
6. Knee and elbow jerk always lost at the very early stage of the disease.
7. Sensation is much impaired.
 - (i) Tactile sensation is perverted hence anæsthesia.
 - (ii) Thermal sensation *i.e.* sensation to heat and cold is lost.
 - (iii) Painful sensation is affected.
 - (iv.) Electric sensation is lost.
8. Sphincters rarely involved.
9. Mental symptoms *e.g.*, muttering delirium, are common.

There are four types of multiple neuritis :—

- (i.) Motor or paralytic.
- (ii.) Sensory or ataxic.
- (iii) Endemic : (*Beri-beri*).
- (iv.) Ascending paralysis (*Landry's paralysis*).

Causes of peripheral neuritis —

1. Toxic causes from poisons *outside* the body.

(a.) Metallic *e.g.*, arsenic, lead, phosphorus, mercury

N.B.—Arsenic neuritis result from the use of toilet powders, drinking of beer and inhalation of wall paper each containing arsenic

(b) Non-metallic, *e.g.*, alcohol, coal gas, bisulphide of carbon and coal tar products.

2. Toxic causes from poisons *inside* the body *i.e.*, neuritis from toxæmia due to development in the system of some bacterial poison *e.g.* as a sequel to diphtheria, typhoid, measles, whooping cough, erysipelas, grippe.
3. Dyscrasia, due to some other disease of the body *e.g.* tuberculosis, rheumatism, diabetes, gout, carcinoma and arterio-sclerosis.

The treatment of peripheral neuritis is divided into two divisions:—

(i) Prophylactic.

(ii) Curative.

i. Prophylaxis.—

E. Leyden, (*Berlin Klin Wochen* 1894) enlightens us with the following points :—

1. Avoidance of too early exertions after convalescence from acute disease.
2. The abstinence from alcohol.
3. The avoidance of lead poisoning.
4. The importance of anti-diabetic diet.

ii. Curative.—

Find out the cause and remove it as soon as possible.

It is an established fact that muscles extremely atrophied as a result of neuritis may completely regain their normal

bulk, strength and electrical reactions. Nerve fibres profoundly degenerated may be entirely reformed, new axis cylinders may develop and become covered with myelin, and ultimately a new set of nerve fibres may convey healthy impulses to healthy muscles.

Treatment during early stage —

Internally :—

R	
Sodii salicylas	gr. iij
(Natural)	
Sodii iodide	gr. ii
Aq. aurantii floris	ad. ℥. j

Mft for a dose. Sig. One thrice a day.

Locally :—

R

1. Oil of gaultheria to be rubbed gently over the limb.
2. Smear the legs freely with equal quantities of extract of belladonna and glycerine, all over, and then apply hot fomentations. The relief afforded is almost instantaneous. Of course the belladonna is liable to be absorbed by the skin, and to give rise to indications of toxic action.

N B —If pain be the pressing complaint try to alleviate it by anodyne remedies e.g. antipyrine, phenacetine, exalgine, methylene blue

Treatment during paralytic stage —

1. Strychnine treatment either orally or hypodermically is highly beneficial.
2. Tonic and cod liver oil are good.
3. Massage and voluntary movement against resistance are recommended. By these means the nutrition and strength of the muscles are improved, while any tendency to contractures is overcome.
4. Electricity, daily application of electricity restores the degenerated nerves and muscles.

- 5 A daily warm bath followed by vigorous friction on the skin, is of value.

The most vital point is to find out the cause of the paralysis of neuritis.

- | | | |
|-------|---|---|
| (i) | Neuritis due to malarial poisoning, | prescribe quinine. |
| (ii) | „ „ syphilis „ | Mercury and pot. iodide. |
| (iii) | „ „ anæmia or septicæmia „ | Tinc. ferri perchloride in large doses. |
| (iv) | „ „ alcoholism „ (hence weak dilated heart) | digitalis and strychnine ; add small doses of cocaine to lessen the craving for stimulants. |
| (v.) | „ „ diabetes mellitus „ | Opium. |
| (vi.) | „ „ lead poisoning | Pot. iodide and mag. sulph. |

Hygienic Treatment:—

First and foremost, the patient must be confined strictly to bed not for a day, but for weeks and months. The bedroom should face the sun, and should be well lighted. It is customary now-a-days to laud the efficacy of light treatment, and it is undoubtedly useful ; but the light should be not that of the arc lamp, but nature's light, the light and warmth of the sun, with all the benefit which can be obtained from its actinic and life-restoring rays. Warmth is useful, but it is not necessary to heat the room with a gas stove, or some similar appliance. Cover over the patient with blankets and rugs, and open the windows wide, so that the fresh air may at all times beat on his head and face and invigorate him,

Protect the patient from exposure to cold. Place him on water bed.

Dietetic treatment .—

Boiled milk, soup, broth, Benger's food and peptonised gruel are recommended.

Feed him well, for without this he will make no progress. Give him three pints of milk a day, with refreshers at intervals of beef tea and meat essence, not the potted variety, but the homemade article. Keep him amused, and keep him interested in all that goes on.

THE CAUSE OF BERI-BERI.

In The Lancet of October 9, 1909, rice theory is well reviewed.

In parboiled rice, remnants of the pericarp remain attached to the rice grains, whereas in white rice the pericarp and layers subjacent to it are polished away in the process of milling. Parboiling renders the rice grains tougher and less friable, so that the peripheral layers cannot be removed so readily as in white rice. In these layers thus retained in parboiled rice are contained most of the aleurone and oily material present in unbroken rice. At one stage of the inquiry there appeared to be a suggestion that this difference in the amount of fat in the two kinds of rice might be found to account for the development of the diseases. The deficiency of fat theory of the origin of beri-beri has been advanced by some experts, and the experience of the Japanese navy seemed to support this hypothesis. But recent experiments prove that there is no connection between the two.

The inference drawn is that it is the milling process which is at fault, and that in that process something (*phosphorus pentoxide*,) is removed which is essential to the maintenance of the normal nutrition of nerve tissue.

At a recent meeting of the German Society of Tropical Medicine, Dr. H. Schauman conjectured that beri-beri would

ultimately be found to be a disease of metabolism associated with a diet deficient in organically combined phosphorus.

Beri-beri is associated with a diet of which white rice is the staple article, this white rice as produced in the mills loses substances which are essential for the maintenance of the nutrition of nerve tissue, these substances exist in adequate amount in the original grain, and in superabundant quantity in the polishings from white rice, the estimation in terms of phosphorus pentoxide of the total phosphorus present in a given rice may be used as an indication of the beri-beri-producing power of such rice when forming the principal constituent of a dietary. The prevention of the disease will be achieved by substituting for the ordinary white rice a rice in which the polishing process has been omitted or carried out to a minimum extent or, by adding to a white rice diet of articles rich in those substances in which such rice makes default. One such article, which is cheap and readily obtained, is the polishings from white rice. The use of parboiled rice will achieve a like result provided the polishing process is not carried beyond the limited extent now customary. These results are extremely interesting and important

Drs. Henry Fraser and A. T. Stanton (*The Lancet*, March 12, 1910 page 733), have embodied their most recent conclusions in a paper which was read on February 18 before the *London Society of Tropical Medicine*.

Their researches go to prove also that beri beri is not a "place disease," that it is not communicable from man to man, that it is not due to the use of stale or deteriorated rice as such, nor to a poison derived from decay; and that it is not due to a specific organism, fungus, mould, germ, or spore.

EPIDEMIC DROPSY.

After analysing several cases of epidemic dropsy for the last three years, the writer has come to the following conclusion:—

1. It is an infectious disease caused by a bacillus the nature of which is unknown at present.

2. The infection is conveyed from man to man, the whole household is generally affected.
3. The poison sticks to a certain locality—"Endemic centre"—as the writer has observed cases every year in the same locality.
4. The poison enters through the digestive tract possibly with the so called uncured rice? other sources have not been traced.
5. Its ravages generally extend during the rainy season.
6. Period of incubation is within a week.
7. Mortality 2 to 4 per cent.

Classical Symptoms are —

1. Fever of remittent type, though in some cases there is no attack of fever.

2. Progressive emaciation and rapid anæmia.
3. Acute dilatation of heart with dropsical effusion of legs and feet, hence palpitation, dyspnœa etc. Œdema of feet is much diminished on rest but reappears when at work
4. Diarrhœa is common and prolonged, though constipation is present in some cases. Throbbing sensation in rectum is not uncommon.
5. Complexion changes to faint black : it is most marked in people of fair complexion
6. Dry hacking cough.
7. Changes in the blood.
 - (a) Diminution of red corpuscles and hæmoglobin.
 - (b) Increase of white corpuscles slightly.
 - (c) Diminution of the coagulating power of blood—calcium salts being distinctly less.
8. Changes in urine.
 - (a) Albumin is generally absent.
 - (b) Indican is usually present.
9. Changes in the eye.

The writer has observed cases turned stone blind within a month when even other signs of the disease are wanting.

Treatment:—**Prophylactic —**

Remove from endemic locality, never visit a patient with an empty stomach; ordinary sanitary precautions, *e.g.*, neatness, cleanliness, etc., are the worst foe of the disease.

“Makaradhaj” gr. ii in juice of beetle leaves is to be taken every morning.

The writer has not seen a single case among Europeans.

Medicinal.—

Rest in bed is indispensable.

Internally:—

Saline draughts, *e.g.*, granular sodii phosph effervescence a teaspoonful or Kutnow’s powder a dessert-spoonful early in the morning.

2. Calcium lactate, gr. v. twice a day to increase the coagulability of blood and thereby to prevent dropsical effusion.

3. Fermented milk 4oz. at noon. Non-pathogenic lactic acid bacilli fight against pathogenic bacilli of the epidemic dropsy and aid the leucocytes to tone up the vitality of the system

4. R

Ext Cinchonæ liq m. v

Ext Nucis Vomica liq m. i

Ext. Digitalis liq (P. D. & Co) m. i

Ext. Apocianum liq. m. x

Ext. Punarnava liq. ʒ. i

(Bengal.)

Dec. Scoparii ad. ʒ. i

Mft. for a dose. Sig. one thrice a day.

5. Iron and arsenic in the shape of arsenio-ferratose a teaspoonful twice a day after meal: during convalescence Huxley’s syrup a teaspoonful twice a day after meal is strongly recommended by the writer.

Locally:—

Gentle massage followed by bandage of lower extremities with uniform pressure from below upwards.

Treat the patient symptomatically.—

1. Dyspnœa, palpitation.

- (a) Inhalation of amyl nitrite.
- (b) Nitroglycerine tabloid.
- (c) Cactina pillets.

2. Cardiac debility.—

Tabloid Digitalin et strychnine 1/100 gr. each.

3. Constipation.—

- (a) Saline Aperient.
- (b) Castor oil emulsion.

4. Diarrhœa.—

Rx

Benzo naphthol	gr. ii
Bismuth Subgallate	gr. v
Pulv. Cretæ Aromatic	gr. x

Mft. for a pulv. Sig. one when required.

5. Rectal throbbing, bleeding &c., ung : adrenalin is to be inserted through a medium sized rectal ointment introducer.

Dietetic Treatment.—

Plenty of milk with bread is good.

Plasmon, plasmon and arrowroot if diarrhœa, soup, oat meal, and sago etc. are recommended.

N.B.—

1. Avoid uncured rice, *e.g.*, Rangoon and other kinds of soiled rice.
2. Avoid oil, especially adulterated mustard oil.
3. Avoid fishes especially those which dip into the salt
4. Avoid salt and salted food.
5. Avoid drinking much water.

Hygienic Treatment.—

Avoid exposure to chill; wear flannel next to the skin to produce diaphoresis, during convalescence change of climate to a dry laterite soil is recommended.

BERI-BERI vs. EPIDEMIC DROPSY.

	Beri-Beri	Epidemic-Dropsy.
Geographical distribution.	Japan, Corea, China, Formosa, Manila, Malay Peninsula, Eastern Archipelago, Madras, Burma, Ceylon, Central Africa, Central and Southern America, imported cases in Australia, Fiji, S Africa, and Britain, common in ships	Lower Bengal, Eastern Bengal and Assam, Madras, Mauritius.
Season ...	Heat and moisture favourable. Prevails all the year round in tropical countries; in the warm season in sub-tropical.	Rains and cloudy season.
Physical Geography.	Lower-lying localities on coasts and rivers. Close valleys in hills.	Plains and hills up to 5000 ft.
Epidemiology	Communities crowded under insanitary conditions most liable—gaols, coolie lines, ships, etc. Endemic and epidemic spread by man. Direct infection feeble or absent	Habitations and institutions visited. Mostly epidemic, spread by man. Immediate infection doubtful, probably whole household sometimes affected.
Causation ...	Unknown ...	Unknown.
Incubation	Unknown probably long	Unknown apparently short
Invasion	Slow insidious in most cases.	Generally sudden and well marked
Fever ...	Rare or marked intercurrent or accidental.	Initial and usual, remittent in type
Gastro-intestinal disturbance	Exceptional, bowels mostly constipated.	Diarrhoea common, often initial and prolonged
Cutaneous irritation.	Rare or absent ...	Common (tingling, burning pain, etc.)
Cutaneous eruption.	Absent	Common
Dropsy ...	Secondary, apt to be partial, in some cases slightly dry beri-beri. Genital not affected nor markedly subject to gravitation.	Initial or early and essential symptom cutaneous and subcutaneous, sometimes visceral genitals affected. Subject to gravitation.
Anæsthesia ...	In every case in patches or extensive areas.	Sensation sometimes dulled over dropsical area,

	Beri-Beri.	Epidemic-Dropsy
Paralysis ..	In most, if not all cases, wrist and foot drop, ataxic gait, apt to be persistent.	Paresis from mechanical effect of effusion in some cases.
Knee jerks ...	Exaggerated in early stage, then lost in really all cases.	Sometimes exaggerated, lost in a small proportion of cases.
Nervous symptom	Essential, initial, prolonged.	Unimportant or absent.
Anæmia ...	Absent	Present
Emaciation ..	Mostly muscular ...	General
Dyspnœa and orthopnœa.	Common .. .	Common
Sudden death	Frequent	Rare
Mortality ..	5 to 10 per cent and over...	2 to 5 per cent
Duration ...	Many months	Some months
Sequelæ .	Persistent paralysis and muscular atrophy.	Emaciation, anæmia and dropsy
Morbid anatomy	Degeneration of nerve and muscles, dilated heart, incompetent valves.	Effusion, congestions, and ecchymosis, dilated heart
Pathology ...	A peripheral neuritis ...	An angio-neurotic œdema (Lakis)
Blood ...	Normal	Diminution of red corpuscles and hæmoglobin Reduced coagulability (Leucocytosis)
Urine	Scanty, low, sp. gr reduced, solids, no albumen.	No albumen, marked indican reaction.
Temperature	Mostly normal or subnormal	Generally raised ; Œdematous areas warm and tender ; temperature about $\frac{1}{2}$ a degree higher than general surface.
Myalgia ...	Well marked, specially in sural muscles.	Absent or doubtful

(*Indian Public Health.*)

FACIAL PARALYSIS.

(*Bell's palsy*).

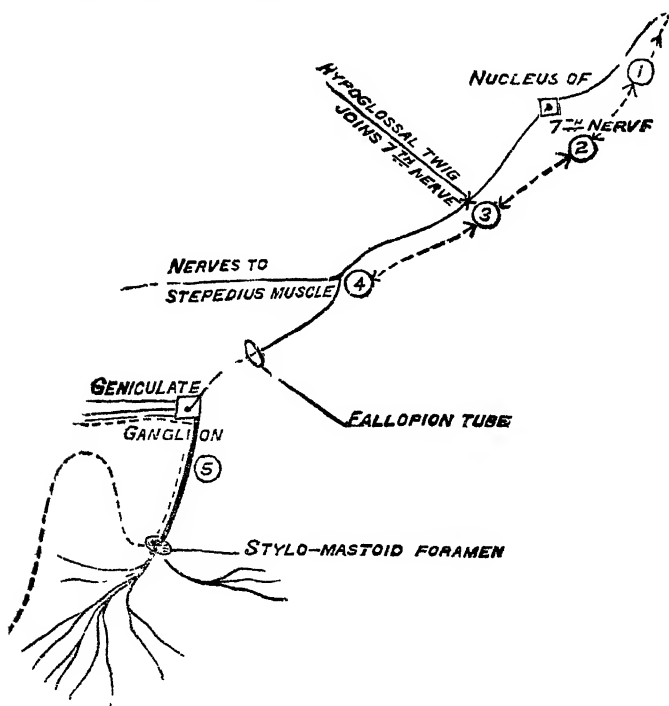
Classical symptoms :—

All the muscles of expression of the face are paralysed, but the physician should be on the alert to note the actions of—

1. Orbicularis palpebrarum.
2. „ oris.
3. Great intensity of hearing musical notes.
4. Sense of taste.

Seats of lesion :—

1. If the lesion of 7th nerve be supra-nuclear, the orbicularis palpebrarum *would escape paralysis*, since its fibres come from the nucleus of 3rd nerve which joins the nucleus of 7th nerve.



2. If the lesion be nuclear or below, the orbicularis palpebrarum is *paralysed*.
3. If the lesion be at the junction of hypo-glossal twig with 7th nerve or below, there will be *paralysis* of orbicularis oris along with orbicularis palpebrarum, since according to Gower, orbicularis oris receives nerves from hypoglossal nucleus and runs in the course of 7th nerve.
4. If the lesion be at the point from which nerve to stapedius muscle emerges or above, there *will be paralysis* of muscles of ear, hence there is great intensity of hearing musical sounds.
5. If the lesion be at the geniculate ganglion, there *is loss of sense of taste* over the anterior two-third of tongue

Causes are —

- 1 Tumors, abscess, chronic inflammation, or softening in the region of the internal capsule in supra-nuclear lesion
2. Tumors, chronic softening, and hæmorrhage in nuclear lesion.
3. Caries of bone, cold, syphilis etc, in lesion within the Fallopian tube,
4. Injuries, blows etc., in lesion as the nerve emerges from the stylo-mastoid foramen.

Treatment —

1. At the onset of the disease :—

Internally :—

1. Open bowels by a brisk purge.
- 2.

R

Sodii salicylate	gr 11
Sodii iodide	gr vii
Aq chloroformi	ad ʒ j

Mft. for a dose. Sig. one thrice a day.

3. In malarial cases

Rx

Quinine salicylate gr. 11

Mtt. for a pulv. Sig. one twice a day with milk

Locally : —

1. Leeches or a blister over the mastoid process.
2. Hot fomentations over the side of the cheek and over the course of the facial nerve, with the object of diminishing the vascular changes, and cutting short the inflammatory process

N.B.—1. Avoid antipyretic remedies as facial neuritis is not usually attended with fever.

2. Avoid alcoholic stimulants

ii. During Convalescence—

The “*reaction of degeneration*” is fully developed at the end of a fortnight, when the inflammatory changes have subsided, the writer recommends the following combination:—

Internally—

Liq. arsenic hydrochlor m.ii.

Syr. acid glycero-phosph ʒ. j

Aq. chloroformi ad ʒ. j

Mft. for a dose. Sig. one twice a day after meal.

Externally :—

1. The continuous current may be employed—

First to remove inflammatory products, to promote repair, and to restore the damaged nerves.

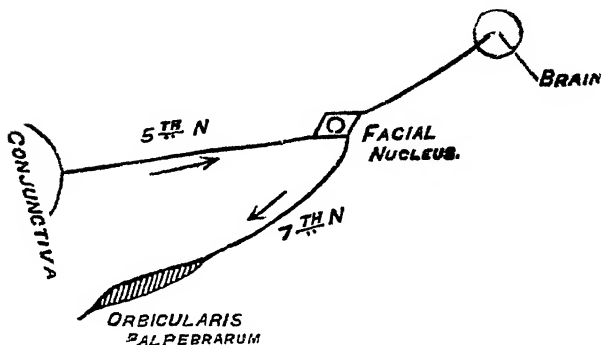
Secondly to keep up the nutrition of the muscles. The positive pole should be placed behind the ear, the negative one along the zygomatic and other muscles.

2. Massage of the muscles of the face with lard or “Mush oil or pure mustard oil is good

Remember :—

1. That there is a tendency to conjunctivitis, hence protect the eye from dust, and all other forms of irritation by the eye shade.

11. That orbicularis palpebrarum frequently regains power before other facial muscles, because reflex impulses are constantly passing from the conjunctiva, round the reflex arc to the seat of the lesion, and that these reflex impulses serve as a stimulus to repair those fibres of the nerve which supplies the orbicularis palpebrarum



- 111 That facial paralysis is according to Prof. Charcot transmitted by inheritance.

MYELITIS.

Myelitis or inflammation of spinal cord may be acute or chronic.

Classification:—

- i. Acute myelitis.
 1. Transverse.
 2. Anterior polio-myelitis.
 3. Abscess of Cord.
- ii Chronic myelitis
 1. Transverse.
 - 2 Anterior polio-myelitis.

Acute transverse myelitis is a transverse softening of the cord due to inflammation, thrombosis or some similar vascular lesion characterised *anatomically* by increased vascularity,

extravasation of corpuscles from the blood vessels, certain changes in the specialised structures tending to destruction and later an increase of the connective tissues and *clinically* by complete loss of sensation and motion below the lesion, by the "girdle" pain, by bed-sores and sphincter troubles

Exciting cause :—

Pathologists are inclined to revolt against the notion of cold alone as a cause of local inflammation. A link is still wanting to connect the depressed temperature of the legs with the inflammation of the spinal cord.

Bacteriological theory points out that cold depresses the vitality of the spinal cord and renders it to succumb to bacteria or toxins

Two important points are injury and syphilis. Injury by compression, caries of vertebræ, new growths, aneurism etc., are the frequent causes of local myelitis.

Classical Symptoms —

1. Feeling of numbness on feet and legs.
2. Slight pain in back.
3. Paraplegia with anæsthesia is developed in the course of a few hours or a few days
4. Retention of urine and constipation are early symptoms.
5. Rise of temperature.
6. Girdle pain.
7. No pain or tenderness.
8. Anæsthesia upto the level of lesion ; tactile sensation is first affected, then thermal and finally pain.

Special symptoms due to the seat of lesion.

(a) If lumbar lesion :—

1. Retention of urine and constipation because subsidiary vesical and rectal centres are involved.
2. Superficial and deep reflexes are weakened or lost.

3. Muscles flabby, tend to waste and show reaction of degeneration.

4 Abolition of sexual power

(b) If dorsal lesion —

1. No versical or rectal trouble but their functions may be slightly impaired on account of anæsthesia
2. Reflexes are present and after a time become exaggerated Spasm, contractures and deformities may develop.

(c) If cervical lesion.

Arms, intercostal muscles, and diaphragm may be involved.

N B —If cilio-spinal centre be involved, there will be irregularity of pupils

Treatment may be summed up in the following groups *viz* :—

- (i) Medical.
- (ii) Dietetic.
- (iii) Hygienic.

Medical treatment :—

Treatment during early stages :—

Physician should try to control and subdue the inflammatory process :

Writer's favourite formulæ.

Internally :—

(i)

R

Ext ergot liq (Hewlett's)	m xx
Liq. Hydrarg perchloride	m xv
Aq Chloroformi	ad. 3.i

Mft. for a dose. Sig. one thrice a day.

Ergot contracts spinal blood vessels while mercury absorbs inflammatory products

N.B.—Antiseptic agents *viz* : quinine, salol, benzo-naphthol are efficacious.

(ii)

R

Tinc aconite	m. j
Liq trinitrini	m j
Aq aurantii floris	ad. 3 j

Mft. for a dose. Sig. one thrice a day.

Locally:—

1. Hot fomentation or bags containing hot sand.
 2. Cupping
- In acute stages steam baths and electricity are useless
Warm baths may act favourably.

Treatment during later stages:—

Physician should try to prevent any of the paralytic effects of the disease from becoming dangerous to life.

Writer's favourite formula:—

R

Sodii Iodide	gr. iii
Syr. trifolium co	3. i

Mft. for a dose. Sig. one with an ounce of water twice a day after meal

Strychnine and electricity are so to soeak the arms of the angel of care, during paralytic stage.

Systematic application of direct electric currents longitudinally along the spine produces very definite improvement.

(Lewis Jones's Medical Electricity. page 434)

In early stage:—Put the patient to bed, apply leeches or wet cups to the spine, use diaphoretics and small doses of aconite and nitroglycerine and a calomel purge.

After a week:—Moderate doses of pot. iodide should be given.

After three weeks:—If there be no fever, use electricity and strychnine.

Atoxyl may be used in the intervals between the courses of mercury and iodide (*A system of Medicine by Osler and McCrae, vol. vii. page 247.*)

Treat the patient Symptomatically —

1 Trophic disturbances may arise from slight pressure *e.g.* bed-sore etc hence sponge the bony part with common salt solution, then rub it well with spirit, followed by dusting of the undermentioned powder:—

℞

Zinc. Oxide	℥. 11
Acid Boric	℥. 11
Violet Powder	℥. 1V

Prevention of bed sore is better than cure.

The vitality of the skin is lessened by loss of nerve influence, by the continued pressure of the weight of the body upon it, and by the diminished circulation which that pressure entails.

2 Retention of urine and consequent cystitis may lead to kidney disease

Draw off urine every 6 hours by a rubber catheter

It should be washed with boric lotion after use.

Method of using catheter:

- i. Wash the meatus with a plug of moist boric cotton to remove dirt if present, otherwise it will go straight into the bladder before the head of catheter and may infect it.
- ii. Lubricate catheter with the following.

℞

Oil amygdalæ	℥. 1
Acid carbolic	gr. xx
Cocaine hydroch.	gr. x
Oil Ricini	℥. 111
Oil Olivæ	ad. ℥. 111

- iii Pass it gently when the patient is on his back
- iv Withdraw it closing the orifice of catheter by the thumb lest air may enter inside the bladder.

If cystitis .—

Internally :—

i.

R.

Urotropin	gr. v
Tinc. Hyoscyamus	m. xx
Inf. Buchu	ad. ℥. i

Mft. for a dose. Sig. one thrice a day.

ii.

R.

Salol	gr. ii
-------	--------

Mft. for a pulv. Sig. one thrice a day.

iii.

R

Sodii benzoas	gr. v
Boro-glycerine	℥. i
Inf : Buchu	ad. ℥. i

Mft. for a dose. Sig. One thrice a day.

Bladder wash :—

i. Boric lotion.

ii. Quinine acid bihydrochloride lotion.

3. Constipation.

(a) Massage of abdomen.

(b) Glycerine enema.

(c) Ext. Belladonna gr. $\frac{1}{4}$ in pill twice a day.

4. Abdominal distension —

Turpentine stupe is recommended.

5. Pyrexia .—

A diaphoretic mixture containing salicylate of quinine.

Sleeplessness .—

Veronal, sulphonal, hyoscine hydrobromate are very useful.

During Convalescence .—

i. In anæmic cases iron and quinine are good.

ii. When bladder trouble persists even after recovery, strychnine is needed.

- iii. To give tonic influence on the affected nerve structure, arsenic and aluminium chloride are recommended.

Writer recommends the following :—

R.

Quinine hydroch	gr. i
Acid Nitro-muriatic dil.	m. v
Liq. strychnine hydroch	m. ii
Spt. Chloroformi	m. x
Inf. Gentian co.	ad. ʒ. i

Mft. for a dose. Sig. one twice a day after meal.

Dietetic treatment :—

- i. *During acute or febrile period.*

Patient should be restricted to liquid diet *viz.*, milk, liq. peptones etc.

When fever subsides, a farinaceous diet is recommended *viz.*, bread and butter, bread and milk, milk pudding, etc.

- ii. *When acute symptoms subside altogether*, solid food may be given.

Hygienic treatment :—

Cleanliness should be the key-note of treatment. Perfect rest is indispensable. Patient should lie flat on his back, or on right and left side alternately. As soon as possible a water-bed should be procured in order to lessen the risk of bed sore.

ACUTE ANTERIOR POLIOMYELITIS.

(*Infantile Paralysis.*)

Acute Anterior Poliomyelitis is a disease of spinal cord characterised *clinically* by motor paralysis of rapid onset, followed by muscular wasting without sensory symptoms, *anatomically* by inflammation of the anterior cornua mostly located in the lumbar or cervical enlargements and *histologically* by a capillary thrombosis which is now regarded (Marie, Batten and others) as microbic in origin.

Acute anterior poliomyelitis is undoubtedly an infectious disease, although the causative germ has not yet been discovered. The infection arrium is probably in some portion of the gastro-intestinal tract, whether the micro-organisms attack the ganglion cells of the anterior horns *in propria persona*, the medium of invasion being through the blood vessels which supply the parts, or whether a soluble toxin is secreted which find its way to the spinal centres somewhat in the manner in which tetanus toxin is conveyed, is not known.

There are but few diseases of childhood which give to life's perspective a more sombre shading.

For practical treatment it is divided into three stages :—

- | | | |
|----------------------------|---|---|
| i. Acute stage | { | Febrile or preparalytic stage—
The object is to reduce fever
and to allay constitutional
disturbances. |
| | | Paralytic stage—The object is
to arrest inflammatory
changes in the cord. |
| ii. A stationary period. | | |
| iii. Stage of improvement. | | |

Acute stage :—

During the stormy hours of onset.

(a) Keep the child quiet in bed.

(b) Apply mild form of counter-irritation along the spine as follows : —

i. Poultice of mustard one part and flour three parts.

Remove it as soon as the skin is reddened and then again renewed.

Apply the counter-irritation continually for at least a week without the discomfort of a blister.

ii. Dry cups to the spine 2 or 3 times a day.

iii. Leeches over spine.

iv. Warm fomentation.

(c) Open the bowels by active purgative .

(d) Mild diet *e.g.* milk and its derivatives.

(e) Subdue fever by :—

i. Sponging the body with alcohol and tepid water.

ii. Diaphoretic mixture with salicylate and ergot.

Writer's favourite prescription for a child of 3 years:—

R.		
	Sodii salicylas	gr. $\frac{1}{2}$
	Tinc ergot ammoniata	m. v
	Spt. ammon aromat.	m. ii
	Liq ammon citratis	m. xx
	Aq. aurantii floris	ad. 3 ii

Mft. for a dose. Sig. one every 4 hours.

iii. Old methods of treatment with hydrarg and belladonna.

R.		
	Hydrarg. perchloride	m. ii
	Tinc. belladonna	m. i
	Sodii bromide	gr. i
	Glycerine	m. v
	Aq camphoræ	ad. 3 ii

Mft. for a dose. Sig. one every 4 hours.

iv. B. Bramwell recommends—

i. Ergot and belladonna to contract blood vessels of inflammatory parts.

ii. Liq. adrenalin chloride 1 to 3 drops every 3 hours.

(f) Abate pain by—

- i. Dover's powder.
- ii. Aspirin.
- iii. Bromide with codia.

(g) Drs. Cushing and Starr recommend urotropin, grains five, every four hours for a child of eight.

(h) Rest in a prone position in bed is better than constant lying upon the back, because of the relief it gives to the cord.

(i) Keep the paralysed limb warm.

ii. A Stationary period :—

The temperature is usually normal : when nature begins her work of reparation, the following methods are recommended :—

(a) Strychnine internally or hypodermically as advocated by Gower, to the point of tolerance.

The usual dose is $1/64$ gr. of strychnine sulph, thrice a day.

N. B.—Continue for a week : then stop it for three days.

(b) Electricity.

High frequency current along the spine contracts the vessels in the cord and thus overcomes the congestion and compression of nerve cells.

The daily treatment should consist of sinusoidal electricity and high frequency current for five minutes, followed by uniformly interrupted galvanic for seven minutes, the sponges being immersed in 10 per cent. sol. of strychnine nitrate.

(American Journal of Obstetric June 1909).

(c) Massage :—

Gower says :—

“The muscles should be daily rubbed and kneaded and gently pinched. The rubbing should be especially upward, so as to expedite the flow of the blood in the veins.”

Dr. Trananthal remarks :—

“To obtain the desired result, grasp between the thumb and the first finger all tissues between skin and bone and by a process of pressing and milking, go from extremity upward the body.”

Massage limbs from below upwards with any of the following :—

- i. Mash oil.
- ii. Old ghee.
- iii. Lard.

(d) Re-education of movement is very important.

(Clinical Journal June 3, 1908.)

During this stage of regressions our main object should be to preserve the nutrition and function of the paralysed muscles, this is to be attained by skilful massage, hydrotherapy and electricity.

The action of electricity is two-fold :—

- i. It causes the contraction of muscles and thus exercises them when voluntary exercise is impossible.
- ii. It promotes those chemical changes in the muscles which are essential to growth and nutrition.

N. B.—B. Bramwell on the other hand remarks, that strychnine, electricity, and voluntary movements are to be avoided in this stage of the disease, but at the end of 4 to 6 weeks they should be tried.

Drugs :—

- (a) Pot. iodide gr. iii three times a day.
- (b) Quinine salicylas gr. i early in the morning.

iii. Stage of improvement :—

Iron, arsenic, hypophosphites and cod liver oil are best.

Lig. auri et arsenici bromidi m. ii⁶ twice a day for a child of three, afford excellent result.

The cells in the spinal cord may regain their functional activity, at least partially, months after their apparent extinction, and the paralysis continues because of the degeneration which has taken place in the muscle fibres. We must prevent as far as possible this degeneration.

- i. By the use of electricity.
- ii. By means of suitable gymnastic exercises.
- iii. By preventing the over-stretching of the muscle fibres by the opposing muscle and
- iv. By massage intelligently given and persistently continued.

There are three degrees of damages in infantile paralysis :—

1. The muscles are wasted, but present reactions which, though weak, are normal in quality both to the induction coil and to the battery current.

Treatment :—recovery is slow and imperfect if left to nature.

2. The muscles are paralysed, atrophied, and show a reaction of degeneration.

Treatment :—Electricity is useful.

3. There is no visible reaction at all.

Treatment :—Electricity can do nothing.

There is a formula in which the Prognosis of infantile paralysis has been commonly summed up. It is as follows :—

“If the ganglion cells supplying the muscle are destroyed, recovery must be impossible, and if the cells are not destroyed, treatment is unnecessary, because the patients will get well of their own accord.”

Change of climate, proper dress and nutritious diet are but means to an end.

LOCOMOTOR ATAXIA.

Tabes Dorsalis is a chronic progressive nervous disease characterised *clinically* by lightning pain, loss of knee jerk, Argyll Robertson's pupil, ataxic gait, bladder disturbance and paræsthesia of extremities, and *anatomically* by a degenerative sclerosis chiefly in posterior columns of the cord and posterior roots and to a less extent in the peripheral nerves.

Three stages of the disease are described :—

1. Preataxic stage.
2. Ataxic stage.
3. Paralytic stage.

1. Preataxic stage :—

There is no incoordination, the patient can stand and walk normally.

The classical symptoms are —

- i. Pain in various parts of the body, it is of lightning character.
- ii. Loss of knee jerk.
- iii. Reflex iridoplegia (Argyll Robertson's pupil).
- iv. Difficulty of micturition.

2 Ataxic stage :—

Standing and walking are rendered more or less difficult.

The classical symptoms are —

- i. Progressive increase of ataxia, want of harmony or co-operation in muscular contractions.
- ii. Defects of sensation.
- iii. Marked anæsthesia on soles of feet giving rise to a sensation of "treading on cotton wool."
- iv. "Stamping gait." The foot is raised too high and is brought down in a stamping manner with the heel first.

- v. Band of thoracic analgesia is useful in distinguishing
tales from cerebro-spinal syphilis and from
peripheral neuritis.

N. B.—Lightning pains in some cases disappear as the disease advances, the pupil sign and the absence of kneejerk remain, as a rule unaltered.

3. Paralytic stage :—

Patient can not stand or walk. It is but as aggravation of second stage, in which the increase and spread of the ataxia has rendered the patient quite helpless. Patient suffers from genuine paraplegia and paralysis of bladder.

Treatment of Locomotor ataxia.—

Tabes is an incurable disease, but we must try to conquer each symptom.

For practical purposes treatment is divided into three divisions *vis* :—

1. Medical.
2. Hygienic.
3. Dietetic.

I. Medical treatment.—

Physician should bear in mind:—

- i. To cure or diminish the pathological condition of the cord.
- ii. To re-establish its deranged functions.
- iii. To allay the distressing symptoms.

The writer narrates various methods of treatment current in practice.

1. Tabes has been regarded as inflammation of spinal cord and hence treated with remedies tending to reduce congestion and inflammation.

- i. Ergot and belladonna are used.

R

Ergotin	gr. ii
Ext. Belladonna	gr. ¼
Ext. Gentian qs.	

Mft. for a pill. Sig. one thrice a day.

- ii. Cauterization and dry cups over vertebræ are useful.
2. There is a close relation between ataxia and syphilis :
hence antisyphilitic remedies are tried.

Ataxia begins as a degeneration of the sensory cells in the posterior ganglia. These cells die either from some poison which syphilis has left behind, or because syphilis has so degenerated the blood-vessels supplying these cells that their nutrition is seriously affected.

Prof. Dana (*New York Medical Journal*) formulates an ideal method of treatment as follows :—

- i If there be history of syphilis :—

1. *Hypodermically* :—

R.

Corrosive sublimate	gr. 1/20
Cocaine hydroch	gr. 1/40
Aq.	m. xx

Inject once a day for 2 to 4 weeks.

Internally :—

Pot. Iodide gr. 30 within 24 hours.

2. After the mercurial course continue pot. iodide gr. 300
a day for 4 weeks.

N. B.—During all this time warm bath twice a week is recommended.

(If hypodermic injection be not well borne, inunction of mercuric ointment dr. j for 6 days and a hot bath on the 7th day are advised.

This being repeated for 3 to 4 weeks,

3. Then *tonic treatment*.

Tinc. ferri perchloride m. xxx., preparation of phosphorus (acid phosphoric dil. m 30 daily) or glycerophosphate of lime and soda gr. 40 daily are recommended.

Continue this treatment for two months.

During tonic treatment—

1. Patient should receive lukewarm bath (daily) for 3 to 10 minutes.

You may add salt, soda, carbonic acid &c., in it.

2. Counter irritation to spine made by cautery or small blister twice a week is good.

Diet :—Fattening diet, malt, cream and oil are recommended.

The anti-syphilitic and bath treatment should be repeated for at least one year.

In interval tonic medication and mechanical treatment are advised.

ii. If there be no history of syphilis .—

1. For two months he should enjoy rest and be on tonic and bath.

ii. Specific measures :—

Put the patient in bed and give hypodermically—

R

Strychnine Sulph	gr. 1/60
Morphine „	gr. 1/60

At the end of a week increase the dose of strychnine to 1/30 gr.

„ 3rd „ „ „ 1/20 gr.

„ 5th „ „ „ 1/15 gr.

(or even 1/10 gr.)

Then these doses are decreased gradually *i.e.* at the

end of 6th week decrease it to 1/20 gr.

N.B.—Give phosphate and iron at the same time,

After a course of this treatment, he should be on tonic treatment with pot. iodide gr. 20 to 30 a day for two months.

Give periodic rest and tonic treatment.

Other drugs used are :— $\left\{ \begin{array}{l} \text{Arsenic, silver, ergot, gold, bari-} \\ \text{um, aluminium.} \end{array} \right.$

Electricity is of use.

“Fraenkel's method”—*i.e.* Systemic exercise for training the limbs from few minutes to half an hour daily. Begin flexing the feet and legs, then the thighs, abducting and adducting, all in turn, with eyes of the patient on the extremities. The eyes control the movements. The object is to educate the lost power of muscular co-ordination

In conclusion Prof Dana in the (*Nervous Diseases and Psychiatry, 1909, page 321*), recommends inunctions or injections of salicylate or biniodide of mercury, warm baths and iodide of potassium.

Injection of salicylate of mercury gr. i once a week for 10 or 12 weeks is recommended.

3. Hammond (*Post Graduate February 1910*) recommends strychnine treatment and Fraenkel exercises.

Method of Administration of Strychnine Orally —

Begin with $1/30$ gr. of Strychnine three times a day ; at the end of a week increase it to $1/20$ gr., and at the end of another week $1/16$ gr. After a maximum of $\frac{1}{2}$ gr. is reached, continue this dose for about a year and then gradually reduce it.

4. Didymin and cerebrin are still on trial.
5. Peritz recommends intramuscular injection of lecethin, the dose being .1 to .2 gramme.
6. Gower speaks highly of arsenic, and where there is much pain aluminium chloride gr. $\frac{1}{2}$ thrice a day after meal.
7. Negro. (*British Medical Journal May 18th, 1901*) recommends santolin gr. v every three hours until three doses have been given.

David Ferrier (*the Clinical Journal March 30, 1910*) recommends *Hydrazurum* a combination of the oxy-bromides of arsenic, mercury and gold :

It is given in doses of 10 m, containing $1/82$ of each of the oxy bromides.

It may be given for many months or even years with occasional intermissions.

It is manufactured by *Bell and Croyden*.

Treat the patient symptomatically —

1. Shooting pain and visceral neuralgia.

Internally :—

Use sedatives *e. g.*, antipyrine or antifebrin gr. x. hourly for 3 or 4 doses, it will often cut short a bout of lightning pains.

Lemoine (*New York Medical Journal July 10, 1898*) recommends methylene blue.

Morphia is forbidden lest a habit is formed.

Locally :—

1. Hot Compresses.
2. Compresses of ether or chloroform.
3. Mustard plaster.
4. Blondel (*Rev. de. therap. April 1895*) recommends a modification of the suspension method, which he believes causes slight elongation of the cord. The patient is placed on his back upon the bed. The thighs are then flexed upon the abdomen so that the knees approach the chin; the legs at the same-time are flexed as much as possible. A cord is passed around the neck and under the knees, thus enabling the patient to maintain this position for atleast 5 minutes daily. This should be continued for a week or even longer if benefit is obtained.

Suspension method is contra-indicated in great debility, emphysema, pulmonary phthisis, atheroma of arteries, disease of heart, and nervous diseases associated with muscular spasm and rigidity.

2. Gastric Crisis .—

Cerium oxalas, chloroform, cold water, electricity, sedative and mineral water are good.

3. Deficient Muscular power .—

Injection of artificial serum, glycerophosphate tonics (quinine, iron and nux vomica), massage, hydrotherapy, electricity and mineral water are recommended.

4 Ataxia :—

- i. If it develops rapidly, absolute rest is recommended.
- ii. If it be chronic, re-education of the muscles according to Fraenkel's method is advised.

By this method muscular movements are brought directly under the control of the will, and thus the incoordination is diminished.

5. Combat the symptoms of hysteria by the principle of suggestion:**6 Incontinence of urine ?—**

Bilbas (*Lancet P. 1299. 1894*) recommends senna which has ordinarily been given for purgative purpose.

It relieves incontinence of urine.

7. Anæsthesia .

Faradic brush relieves it.

8. Organic therapy.—

Spinal cord extract is said to be efficacious.

9. Increased arterial tension .—

Nitroglycerine is recommended by Osler.

It should be pushed on, until the physiological effect is produced.

10 Neuralgia of rectum and bladder.—

Suppository of morphia and belladonna affords ready relief.

11. Insomnia.—

Chloralamide gr. xx is efficacious.

Hygienic treatment —

Absolute rest in bed should be the rule. Patient should lead a quiet life free from anxieties, and from the drive of excessive business ; avoid alcohol, tobacco, sexual indulgence and exposure to cold.

Pains are intensified by cold and damp, and therefore patient is recommended to live in some dry healthy climate.

Hydrotherapy in moderation and warm bath are good. Electricity is of some avail in alleviating the pain. Patient should practice the use of limbs.

Dietetic treatment.—

Wholesome antiscorbutic diet with a large portion of fatty food is good ; iron and codliver oil as being the remedy which is the best nerve food, are very efficacious.

HEREDITARY ATAXIA.

There are three forms of ataxia of congenital origin.

1. Hereditary spinal ataxia (*Friederick's ataxia*)
 2. Hereditary ataxic paraplegia.
 3. Hereditary cerebellar ataxia.
1. **Friederick's ataxia** is a chronic degenerative disease which mainly attacks the posterior and lateral columns of the cord.

Symptoms :—

1. Ataxia is common in lower limb and spreads to upper limb and finally involves the tongue.
2. Peculiar rolling gait.
3. Thick scanning speech.
4. Early talipes and scoliosis.
5. Gradual paraplegia.
6. Loss of knee jerk.
7. Absence of anæsthesia, pain, bladder and rectal trouble.

2. Hereditary ataxia paraplegia.—

Symptoms :—

1. Ataxia.
2. Stiffness and weakness in legs.
3. Reflexes exaggerated
4. Absence of anæsthesia, pain.

3. Hereditary cerebellar ataxia —

Symptoms :—

1. Gait resembling that of a drunken man.
2. Absence of Rhomburg's sign.
3. Chloroform movements and oscillation of head.
4. Hesitating speech.
5. Knee jerk exaggerated.

Treatment of hereditary ataxia:—

Quiet life, good food and healthy surrounding are so to speak the tripod of this disease.

Internally :—

R

Liq. arsenic hydroch.	m. ii
Huxley's syrup	ʒ. j
Aq. Chloroformi	ad. ʒ. j

Mft. for a dose. Sig. one twice a day after meal.

Reeducative exercises, as in tabes may be of some benefit.

(*A System of Medicine by Osler and Mc. Cræ, vol. vii. page 139.*)

SPASTIC PARAPLEGIA.

Spastic Paraplegia means loss of power with spasm of the muscles of the lower extremities.

Prof. Osler classifies Paraplegia under the following forms :—

1. Primary Spastic Paraplegia due to primary sclerosis of the lateral or pyramidal tracts,

2. Primary combined sclerosis.
3. Secondary spastic paralysis, as a result of chronic myelitis or multiple Sclerosis. Degeneration takes place in the pyramidal tracts below the point of disease.
4. Erb's syphilitic paralysis.
5. Spastic paraplegia of infants.
6. Hereditary paraplegia.
7. Atonic paraplegia.
8. Hysterical spastic paraplegia.

It is characterised *anatomically* by a relatively chronic sclerosis of the posterior column, of the lateral columns chiefly the pyramidal and cerebellar tracts.

Treatment :—

Internally :—

1. *In early stage* if there be suspicion of hæmorrhage.

R̄

Ext. Ergot liq. (Hewlett's)	℥. ss
Tinc. Belladonna	m. v
Aq. aurantii floris	ad. ℥. j

Mft. for a dose. Sig. one thrice a day.

2. *In advanced stage* :—

R̄

Tinc. Belladonna	℥. ii
Hydrarg bin-iodide	gr. j
Syr. Trifolium Co.	ad. ℥. xvi

Dose : half an ounce with two ounces of water thrice a day.

3. *In later stage.*

Internally :—

R̄

Pot. Iodide	gr. v
Aq. Anisi	ad. ℥. j

Mft. for a dose, Sig. one thrice a day,

Externally :—

1. Electricity and massage are strongly recommended by B. Bramwell.
2. The patient should lie on water bed to prevent bed-sore.
3. Apply ice over seat of lesion of the spinal cord.
4. He should lie on prone position.

Treat the patient symptomatically.—

1. Vesical trouble :—

Draw off urine every six hours by soft rubber catheter.

If cystitis be present,—

Internally :—

- (a) Urotropin gr. v. twice a day.
- (b) Salol gr. iii. twice a day.
- (c) Acid phosphate of sodium dr. j. twice a day.

Urethral wash :—

- (a) Boric lotion.
- (b) Quinine acid bihydrochloride lotion.

2. Rectal trouble :—

Open bowels by (i) tepid water enema.

(ii) glycerine suppository.

3. Nocturnal Spasm of flexor muscles and Sleeplessness:—

R

Veronal	gr. v.—x.
Sac Lactas	gr. xx.

Mft. for a pulv. Sig. at bed time.

4. Pain on back:—

It is relieved by the application of Corrigan button over spine.

SYRINGO-MYELIA.

Syringo-myelia is characterised *clinically* by a progressive atrophy of hand muscles, peculiar disturbance of sensation and nutrition, and *pathologically* by the formation of cavities and development of gliomatous tissue in the central part of the cord.

Symptoms :—

1. Scoliosis of spine.
2. Trophic disturbances.
3. Progressive muscular atrophy.
4. Peculiar partial anæsthesia. Sensation to heat and cold, and painful sensation are lost, but tactile sensation remains intact (thus differing from Morvan's disease.)

Treatment —

Arsenic and silver have influence on gliomatous tissue and therefore are recommended.

The alleviation of pain, and careful protection against all the septic processes to which these patients are so exposed, comprise the chief treatment.

Belladonna and ergot will be useful in relieving early sphincter trouble and in diminishing painful spasm.

MUSCULAR ATROPHIES AND DYSTROPHIES.

i Progressive Muscular atrophies are those disease in which the cells of anterior cornua and pyramidal tracts are affected.

ii Progressive Muscular dystrophies are those diseases in which the muscle tissue and its nerves are involved.

Classification of progressive muscular atrophies.

1. Progressive ophthalmoplegia.
2. Progressive bulbar paralysis.

3. Progressive muscular atrophy (*proper*)
4. Progressive hereditary muscular atrophy.
5. Amyotrophic lateral sclerosis.

(*Charcot's type.*)

1. **Progressive ophthalmoplegia** is a degeneration of the nuclei of the motor nerves of the eye.

Symptoms :—

- i. Vision not impaired.
- ii. Impairment of mobility of the eye-ball.
- iii. Drooping of eye-lids.
- iv. Hutchinson face.

Treatment—

Pot. iodide, arsenic, strychnine, phosphorus and gold chloride are recommended.

Progressive bulbar paralysis.

(*Glosso-labio-laryngeal-paralysis.*)

There is a progressive wasting and paralysis of the muscles of tongue, lips, soft palate, and throat.

Symptoms :—

1. Tongue is affected, hence speech becomes indistinct ; the patient finds difficulty in pronouncing the following words :—

L. R. N. T.

- ii. Lips are affected, hence he cannot whistle or pronounce P. B. M. O.
- iii. Saliva dribbles.
- iv. Lower part of the face becomes expressionless.

Treatment :—

Good food, rest, massage and tonic are recommended.

3. **Progressive muscular atrophy :—**

(*Aran-Duchean type.*)

The disease is characterised by a slow progressive atrophy of the muscles of trunk and extremities with subsequent

paralysis but no notable sensory disturbance. The cause is a progressive atrophy of the motor and trophic cells in the spinal cord.

Symptoms —

- i. Pain in arm and shoulder with numbness is the first complaint.
- ii. Muscles of hand waste and a characteristic "claw hand" results.
N.B.—The paralysis is the result of atrophy and does not precede it.
- iii. Fibrillar twitchings are common.
- iv. No anæsthesia in typical cases.

Treatment :—

Tonics, rest, massage, electricity, and intermuscular injection of strychnine are recommended.

4. Progressive hereditary muscular atrophy.

(*Charcot Marie's type.*)

Atrophy begins in legs and extends upwards, subsequently "club foot" is formed.

Treatment same as above.

5. Amyotrophic lateral sclerosis—

This is a spastic form of progressive muscular atrophy. Atrophy of the anterior horns and sclerosis of the anterio-lateral columns are combined in this disease.

Symptoms :—

- i. Symptoms of progressive muscular atrophy.
- ii. Spastic paraplegia.
- iii. Reflexes exaggerated.

Treatment—

Gower recommends courses of arsenic and strychnine ; if there be history of syphilis, mercury and pot. iodide may be tried ; massage is very good.

ii Progressive muscular dystrophies —

Pseudo-muscular dystrophy —

(*Duchenne's paralysis*)

Pseudo-muscular dystrophy is the only form of idiopathic myopathy (muscular atrophy) in which there is an increased volume in the muscles due to an increase in the connective tissue.

There is enlargement of the calves associated with weakness of the shoulder muscles.

It is a disease of childhood, heredity is a potent cause, probably due to a congenital defect in the muscles themselves; boys are more affected than girls, it is common in Bengal.

The classical symptoms are .—

- 1 The patient a child is generally brought for "weakness of legs." There is a characteristic waddling gait; they walk with legs apart, they can not walk fast. The patient so to speak climb up to himself *i. e.* when he is told to stand up, he clambers up by placing his hands on his own knees
2. Owing to the weakness of shoulder muscles, the shoulders slip up to the ears when the child is lifted up under the arms.
3. There is a notable increase in volume of some of the muscles *e. g.* calves, glutei, deltoid, supra and infra-spinati, while some are diminished in size *viz.* lower two-thirds of pectorialis major, latissimus dorsi and teres major. The so called apparent hypertrophied muscles feel harder, tougher and not so elastic than muscles in health.

N.B.—The muscles show no fibrillary twitching and reaction of degeneration; thus it differs from progressive muscular atrophy.

4. Deformities such as lordosis, talipes equinus occur from the weakness and contracture of the respective muscles of the spinal and legs.

5. Knee jerk is gradually lost.

N.B.—Intelligence is not affected.

It is not usual for the patient to die from the disease, and to live over the twentieth year.

Pathology.—

The disease is a degenerative atrophy.

The process affects first to muscle fibres and nerve terminals; connective tissues are involved later. It is not a case of simple atrophy; the atrophic process is accompanied by *evidence of irritation e.g.*

(a) Swelling of muscle fibres.

(b) Proliferation of muscle nuclei.

(c) Splitting up of fibres longitudinally.

(d) Connective tissue proliferation.

There is evidence of deposition of fat in connective tissue cells. Nerves and spinal cord are healthy.

In short the process is a primary degeneration due to inherent nutritional weakness of muscles.

Treatment —

In the treatment of this disease, physician should bear in mind :—

1. To keep the patient warm.
2. To take care especially in the later stages that he may not catch cold or get any pulmonary attack.

The muscles should be exercised both actively and passively.

1. *Actively*: (a) by getting the patient to perform certain movements every day short of fatigue.
(b) by walking. The patient rapidly gets worse when he ceases to be able to walk.

2. *Passively*: (a) by means of massage to the affected muscles with lard, old "ghee" or "susak" oil.

(b) by manipulation of the joint to prevent contracture.

(c) by faradising the affected muscles.

No specific has been found to arrest the disease. Try to keep up the health and strength of the patient by suitable tonics and cod liver oil: e.g. phosphate of iron, arsenic, phosphorus and strychnine.

2. Idiopathic atrophy (*Erb's paralysis*.)

Symptoms:—

- i. Atrophy of upper arms, shoulder is the common seat.
- ii. No twitching, no reaction of degeneration.
- iii. Inherited tendency.

Treatment:—

Same as above.

MULTIPLE SCLEROSIS.

Desseminated sclerosis is a chronic progressive nervous disease characterised *anatomically* by the formation of sclerotic patches in different parts of the brain and spinal cord, and *clinically* by.

1. Paralysis (usually paraplegia).
2. Coarse tremor.
3. Disturbance of speech.
4. Nystagmus.
5. Apoplectiform attacks.
6. Cerebral and spinal symptoms depending on the site of lesions.

Causes are.—

1. Shock.
2. Injury.

3. Infectious fevers e.g. pneumonia, typhoid, rheumatism, whooping cough etc.

Treatment.—

No medicine has been known to arrest the progress of the disease.

1. Silver preparation.

Rx

Argenti nitras	gr. 1/6
Kaolin	qs.

Mft. for a pill. Sig. one twice a day after meal.

2. Arsenic in the shape of liq. arsenicalis m. ii twice a day after meal is recommended.
3. Grasset remarks that solanine diminishes the amount of tremor.
4. Hydrotherapy.
5. Electricity.
6. Massage and Passive movement at various joints are of undoubted value in lessening the tendency to permanent contracture and to spasmodic rigidity.

All depressing influences must be removed as far as possible.

Absolute rest is indispensable.

Fatigue of all kinds, both physical and mental and indulgence in wine and venery must be avoided.

Try to keep up health at a high standard by open air carriage exercise, administration of nutritious diet, exhibition of cod liver oil, malt and tonic.

Patient should be cautioned when walking always to stop short of fatigue.

Liq. arsenic m. ii—vi three times a day is of service; strychnine is to be avoided, since it tends to increase the spastic state. (*A System of Medicine by Osler and McCræ, vol. vii page 160.*)

HEMIPLEGIA.

Hemiplegia or paralysis of half of the body, is *complete* when it involves face, arm and leg, or *partial* when it involves only one or other of these parts.

The most firmly established fact is "the law of crucial conduction" *i.e.*, that a lesion on one side of the brain causes disturbances on the opposite side of the body.

The question of localisation of lesion is very important. In majority of cases the lesion is situated *above the point at which the decussation* of the motor fibres takes place in the *medulla* and is therefore on the opposite side of the body from that on which the hemiplegia exists

If however the lesion be *below the decussation*, the paralysis and lesion are on the same side.

When there is paralysis of arm, trunk and leg on one side with facial paralysis and anæsthesia on the opposite side, associated with early rigidity of the paralysed side, conjugate deviation of the eyeballs, rise of temperature, a contracted pupil, convulsions with difficulty in swallowing and in speech —the lesion is in the *Pons varolii* on the side opposite the paralysis and is below the decussation of the facial nerve.

N.B.—If both sides of the face are paralysed with hemiplegia elsewhere, the lesion is the pons where the facial fibres cross.

If there be hemiplegia involving the lower part of face, arm and leg and in addition, paralysis of the facial and oculo motor nerves on the opposite side, and in association impaired sensibility and vasomotor changes in the limb—the lesion is in the *crus cerebri* on the side of the upper facial paralysis *i.e.* on the same side as the ptosis.

The common site of lesion is in the *posterior limb of internal capsule*, owing to the fact that the middle cerebral artery in one of its lenticulo-striate branches perforates the

internal capsule and ends in caudatus nucleus, and this artery is so commonly ruptured that Charcot calls it "artery of cerebral hæmorrhage." Wasting of the paralysed muscles only ensues from disuse, and not from tropic changes.

Another important place is the *motor cortex*.

There are three important causes of hemiplegia.

1. Hæmorrhage.
2. Embolism.
3. Thrombosis

Now the question arises how to distinguish one from the others

Hæmorrhage.	Embolism.	Thrombosis
1. Onset sudden ...	Onset sudden ...	Onset gradual.
2. Absence of premonitory symptom.	Absence of premonitory sign and symptom.	Patient previously complains of headache, vertigo, tingling in fingers.
3. Young people ...	Any people ...	Old people.
4. After exertion <i>e.g.</i> sudden strain at stool, etc. and free use of stimulants especially if there be history of granular kidney with hypertrophied heart or any disease in which arterial wall becomes arteromatous <i>e.g.</i> syphilis, chronic lead poisoning, chronic mercurial poisoning.	Endocarditis (chronic or ulcerative); embolus passes through left cerebral artery generally and therefore paralysis on right side of the body.	Comes on during sleep when circulation is feeble, there will be history of (a) Headache severe at night. (b) Tender spots on scalp due to syphilitic periositis. (c) Mental inactivity. (d) Muscular numbness. (e) Paralysis.
5. Loss of consciousness, falls in a sleep of coma.	Consciousness diminished.	Consciousness diminished.
6. Strong heart suggests hæmorrhage.	Brut ...	Weak heart during convalescence when circulation is sluggish.

Hæmorrhage	Embolism.	Thrombosis.
7. Temperature always falls down till death or is replaced by irregular pyrexia	Normal	If fallen it soon rises to normal
8. Vomiting and contracted pupils from pressure on lower centres, breathing stertorous, no convulsion because the lesion is destructive.	They are generally absent.	They are absent
9 Nil ..	Nil ...	Mental symptoms present.
10 Never give cardiac stimulant.	Never give cardiac stimulant.	Cardiac stimulant.

Treatment—

Treat the cause of the disease :—

i. Hæmorrhage.—

Patient should be kept absolutely quiet ; reduce blood pressure by—

- (a) a drop of croton oil on sugar or butter.
- (b) Saline purgative.
- (c) Bleeding.
- (d) Nitroglycerine.

Double ice bags, one in front, another at back to control cerebral circulation, feet to be kept warm, level of bed towards leg should be on a lower level than that of head.

Prophylaxis against future attacks of hemiplegia in those cases which have a high arterial tension with cardiac hypertrophy, is the use of aconite as a cardiac sedative.

ii. Embolism.—

- (a) If it has arisen in a septic focus, little can be done.
- (b) If it has arisen in a heart focus, don't give cardiac stimulant because by doing so we may cause another embolus to be swept off the valve.

iii. Thrombosis—

Stimulate circulation ; avoid purging, every effort should be made to maintain arterial pressure in order that a collateral circulation may if possible be established.

If there be history of syphilis give potass iodide and mercury as follows :—

R

Pot. iodide	gr. vii
Liq. hydrarg perchloride	m. x
Syr. Trifolium Co.	ʒ. ij
Doc. Sarsa Co.	ad. ʒ. j

Mft. for a dose. Sig. one twice a day.

CHAPTER X.

MALIGNANT GROWTHS.

Sarcoma and Carcinoma are the "Darkest Africa" on the map of medicine ; hence, naturally, it is the happy hunting ground of quacks.

The etiology of malignant growths seems to be a sphinx-like problem shrouded in the mysteries of the by-gone centuries.

SARCOMA.

Surgery can eradicate it in certain situations, but in cases which are "past all surgery," Dr. Coley of New York holds out a hope of relief, like an Adamantine Rock amidst a foaming sea, from the use of the mixed toxins of erysipelas and bacillus prodigiosus.

It is by the administration of certain bacterial toxins which can cause the degeneration, death and absorption of living tumor cells of malignant tumors *e.g.* Sarcoma and Carcinoma.

The tumor soon loses its lustre and colour and becomes paler ; and if we can develop an attack of erysipelas, the disease seems to be at an end.

There is rise of temperature invariably after injection of Coley's fluid.

Coley's fluid is a mixed toxin of erysipelas and bacillus prodigiosus.

Duration of treatment :—

Inject toxins until the tumors have entirely disappeared, and then continue in smaller doses and at greater intervals

for 3 or 4 months longer. If no improvement is noted at the end of 4 or 5 weeks, a successful result is not likely to occur.

Dosage of toxin :—

$\frac{1}{4}$ m. of Coley's fluid diluted with sufficient boiled distilled water to be injected into the tumor itself or to be injected into the buttocks or pectoral region if it is in an inaccessible region.

N.B.—In recent years, Dr Coley no longer inject the initial dose directly into the tumor but first test the individual susceptibility of the patient by systematic injections in the buttocks or pectoral regions, after a few such injections local treatment may be begun.

Daily injections should be given increasing by $\frac{1}{4}$ m. until the desired reaction namely a temp. of 102° to 104° F. has been obtained.

The maximum dose has been 7 to 10 m.

Each case must be treated on its individual merits :

It is a very good rule not to repeat injections as long as the patient has any material rise of temperature, but to wait until the latter has fallen to normal.

CARCINOMA.

In the whole of the grim battle array of death which we have to face there is no more formidable shape than cancer.

Theories of cancer.

One group believes in the extrinsic or parasitic theory and the other group of investigators proclaims the intrinsic or cell theory as pathogenic.

The Extrinsic or Parasitic Theory.

To the first group belong those investigators who believe strongly that cancer is due to a Micro-Parasite—a Bacterium, or some lowly animal form such as protozoan which selects an epithelial cell, as its habitation.

Cancer is at first purely local and spreads by continuity and contiguity until the lymphatic vessels become involved carrying the disease to distant parts. All these facts and many others point strongly to a parasitic origin.

Thoma described nucleated bodies in both the nucleus and protoplasm of cancer cells as "parasitic organisms." Russell called them "fuchine bodies." Metchnikoff termed them parasitic protozoa".

Brand described "cachexia" as the result of saturating the patient with toxin of bacteria causing disease.

Borrel maintains that the cause of cancer is an *infectious virus* or an *invisible or ultra-microscopic organism*.

The majority of pathologists are, however, distinctly opposed to the belief that any parasite produces cancer—Gaylord in *Am. Prac Surg.* 1909

Up to the present time no cancer micro-organism has been found that will satisfy even one of Koch's postulates of pathognomonic micro-organisms.—Bland-Sutton, in *Keen's Surgery*, 1909.

Roger Williams in his recent work "The Natural History of Cancer," bombards with shot and shell, the parasitic origin of cancer.

Intrinsic Theory :—

Cohnheim's Embryonic theory that tumors are derived from displaced fragments of the germinal matrix, sequestered during the earliest period of embryonic life forming the so-called "Rests," "Vestiges" etc., is now discarded as an explanation of the origin of cancer—*Keen's Surgery*.

Anarchistic and Nihilistic cell rebellion or a typical cell proliferation seems to be responsible for malignant growths. The cause of this abnormal cell transformation would seem to reside biologically in the cell itself or pathologically from infective initiative or neurotic antecedents.

Is the stimulus to malignant cell proliferation derived from within the body, or is it from without ?

Possible Causes from within the Body.—

Worry and mental anxiety are said to predispose cancer. Senile and trophic neuroses may also influence cytology. Heredity plays an important role in this disease,

W. Roger Williams, F. R. C. S., Eng., believes that tumors arise mainly from the abnormal play of forces generated within the body. In malignancy there is a *higher* alkalinity of the blood serum, and a *diminution* of hæmoglobin.

The proteins of malignant growths are less easily coagulable by heat than are those of normal tissue cells. The salts of potassium are said to increase and the salts of lime to decrease the disease.

In febrile diseases there is a *decrease* of alkalinity of the blood, and we find febrile diseases, gout, erysipelas, etc., to be antagonistic to the growth of cancer.

Hyper-alkalinity would seem to increase the growth.

Auto-intoxication may stimulate independent cell proliferation. Cancer increases most rapidly in the rich and *overfed* communities.

The retention (as in constipation) of decomposing and putrescent food matter resulting from overfeeding, with the elaboration of indol, skatol, amines, ptomaines, toxins, leukoamines etc., may form causative antecedents.

Starvation of communities leads to acidosis of the blood, a lower death rate from cancer and an increase in tuberculosis and child bearing.

Sajous says that malignant growths seem closely connected with *adrenal insufficiency*.

Likewise may not pancreatic, thyroid, and other glandular secretions (enzymes) exert some etiological influence ?

Meat Theory :—

Roger William in *2nd vol. of the Lancet for 1898* remarks that the increase of Cancer is due to errors in the conduct of

life, and specially to a diet containing an excess of meat along with deficient bodily exercise, on the other hand statistic shows that cancer is just as prevalent among the Hindus, to whom the flesh-pot is an abomination, as among the "Cow eaters" whom they despise.

Fish theory.—

Bose maintains that the small fish which one eats entire without regard to the little bones which they contain, constitute by themselves a source of danger of infection for the stomach and the entire alimentary canal.

The angle worm theory.

It was enthanized at its birth. The parasites that grow on trees as "cancer root" etc., and are taken into the human economy in food and drink do not seem to merit consideration.

Tomatoes and cabbages are not proven as causative factors. Vegetarians are not exempt from cancer.

Pork theory —

It has been abandoned of malignancy.

"Cancer houses," "Cancer Localities" do seem to furnish a greater number of cancer cases than other houses and other localities in spite of the decision of cancer experts.

Cancerous tumors are cured and disappear occasionally without any treatment of any kind and some persons and some animals seem to be immune.

The *Materies Morbi* sought by pathologists in cancer etiology of to-day is a chemical substance.

Morphological investigations have failed.

The "irresponsible trophoblasts" of Board are still "*irresponsible*."

Rokitantky's "Kakoplastic" albumin is without foundation as a causative factor.

Physiologists are now working on the theory of the metabolic activity of the cell nuclei storing a ferment which, passing into the cytoplasm, may possess specific cancer antecedent activities.

Bio-chemical disturbances between cell nucleus and protoplasm with catalytic results, assume enzymic production having malignant propensities.

"Malignin" is named as one of the special intra-cellular cancer "ferments."

Possible Causes from without the Body :—

The great authorities of the Imperial British Cancer Research Fund, assure us that cancer is neither infectious nor contagious.

W. Roger Williams in his masterful work on the "*Natural History of Cancer*" remarks on page 216 :—

"We have already seen that the tissue cells may be incited to abnormal growth and proliferation by some traumata, by the toxins of certain microbes, by various chemical, electrical, thermal, mechanical and other extrinsic agencies; although none of these seem able, *per se*, to carry the process on the true tumor formation."

Irritation theories :—

1 Roentgen, Radium, and Actinic Rays —

Notwithstanding the beneficial effects of Radium and X-rays on superficial malignancy, numerous cases of cancer have developed from these radio-active emanations and actinic rays.

2. Smoker's lip —

Does the clay pipe, with its hot burning and *radio-active* stem predispose to epithelioma of the lips? It does seem so to the writer.

Chimney Sweep's Scrotum.—

It is not likely the carbon has any influence in the production of malignancy but the sulphuric acid, ammonium sulphate, sulphurous oxides, tar, pitch and oils are claimed to be potent factors.

4. Bank's salt theory.—

Salt in excess acts as an irritant to the stomach, on the other hand some physicians remark that cancer is caused by a germ which develops when the amount of chlorine in blood is deficient and therefore recommend the use of common salt both internally and externally.

“Cancer Houses.”

So-called “cancer houses” and localities have been found to have *smoky* and badly drawing chimneys as well as cold, damp, badly ventilated, sunless, overcrowded, mouldy premises. These houses are generally situated on low ground without any subsoil drainage, where drainage pollutes the surface water and decomposition of organic matter in the soil is retarded by stagnant pools which interfere with nitrification of the soil.

Geographical distribution of cancer—

Cancer is chiefly a disease of temperate regions, being non-existent in the extremities of temperature such as exists in Greenland or Iceland and the tropics.

Many years ago, Mr. Alfred Haviland showed by an elaborate series of investigations that districts having the highest death rates from cancer were traversed by, or in close propinquity to, fully formed rivers which seasonally overflowed their banks and flooded considerable areas; and that, geologically, these districts were characterised by alluvium and subsoils of clays of every variety of age and formation. On the other hand, districts in which the cancer mortality was low, were characterised by the oldest palæozoic rocks, especially those of the Carboniferous Limestone period.

Site of cancer :—

Most common situations are :—

Tongue, lips, breast, stomach, intestine, rectum, os and uterus.

Rare sites are :—

Ear, extremities, throat, larynx, œsophagus, liver and penis.

Cancers propagate themselves in various ways :—

1. By contact as from one lip to the other.
2. By continuity of tissue as in cancerous infiltration.
3. By transportation as when we see minute ulcerations about the nipple or along the milk-ducts in cases of cancers of the breast.
4. By metastasis to a distance along lymph-tracts.
5. By conveyance along the veins or blood-vessels.

(Special Cancer Number Practitioner.)

Some special points regarding cancers :—

Acute infectious diseases retard the growth of cancer.

Wasting diseases and debility (starvation) retard the growth of cancer.

Coley's fluid, streptococci of erysipelas and bacillus prodigiosus may cause remission.

It is well to remember in the so-called cures that malignant tumors may at times without any apparent cause *retrogress and heal or spontaneously disappear altogether.*

No hereditary condition is more favourable to the development of cancer than that which gives proclivity to tubercle.—*Williams.*

Cancer mortality is much greater in temperate climates.

Cancer reaches a high rate among the well-to-do and over-fed people.

Poverty, starvation and famine decrease cancer to a marked degree. Savages, and wild beasts suffer much less from cancer than civilized beings and domesticated animals.

Cancer is rare in Africa. Negroes even after 200 years of civilization in America, suffer much less from cancer than white people.

The theory of heredity or a predisposing cancer tendency is favored by A. Roger Williams, who cites a number of cases in support of his views.

There is no doubt however that certain families are predisposed to cancer. *Von Bergman* and *Bull*.

The incidence of cancer is seemingly largely conditioned by nutrition—overfeeding, especially on a meat diet.

Treatment of Cancer.—

Medical—

Internally:—

1. Thyroid extract is advocated by Dr Robert Bell on the *Treatise entitled Cancer*, its causation and curability without operation.
2. The enzymic treatment is outlined by Dr. John Beard of Edinburg.

The treatment consists of:—

- i. Holadin (pancreatic gland extract) cachets, two or three half an hour before food.
- ii. Pancreo-hepatic pepule, (oxgall compound, strychnine, pancreas extract and oxgall); dose one every night.
3. Constipation which favours absorption of extro-toxin to be removed by mag. sulph.

Locally:—

'Lotio pancreatis' to wash the part.

Concentrated sun-light, X-ray, electricity, cataphoresis, radium, radio-active rays and phototherapy have done some good in superficial or "skin cancer." Dr. Hirshberg, in 1905, reported the cure of an epithelioma on his ear by exposing it to the direct rays of the sun. He maintains that the treatment must be carried out in the high altitudes of the mountains and in the winter sun, as the ultra-violet rays are absorbed by the dust-laden atmosphere of the low lands, and in summer there is always the risk of *erythema-solare* if there is prolonged exposure to the sun.

Hypodermically :—

- i. 'Injectio trypsin' to kill the cancer cells.
- ii. 'Injectio amylopsini' to digest the killed or dead cancer cells.
- iii. Injection of adrenalin chloride 1 in 1000.

Surgical :—

The only method which offers any hopeful prospect to individuals affected with cancer is the early and thorough removal of the affected part with the associate lymphatics and lymph glands—*Bland-Sutton, Keen's surgery.*

Treatment of cancer of the stomach —

The internal therapy of the carcinoma of the stomach is not so infective as might appear, considering the malignant nature of the affection. Although we are not in a position in any sense to bring about a 'cure' we can lessen the suffering of the patient and prolong life by maintaining the physical strength of the patient.

The treatment is divided into two groups :—

- i. Dietetic.
- ii. Medicinal.

i. Dietetic treatment :—

Diet should be of liquid or semi-solid consistency and rich in liquid fats (butter, cream).

The following is the ideal menu of diet :—

6 A.M. A glass of tepid water.

7-30 A.M. Milk with cream and butter.

Plasmon biscuit soaked with milk.

10 A.M. Fine rice well cooked, soft egg, soup, fresh vegetables, fishes, milk with cream.

1 P.M. Somatose, sanatogen and milk.

4 P.M. Plenty of fresh ripe fruits :

palatable peptone or panopepton.

6 P.M. A cereal soup or broth containing much butter.

8 P.M. Washed bread pap, milk and cream.

ii. Medicinal treatment.—

The physician should bear in mind the following points, *viz.*

1. The increasing of the appetite.
2. The improving of the digestion.
3. The relief of the suffering.
4. The keeping up of the vitality.

These indications are accomplished as a rule by the following methods *viz.* :—

R

Ext. condurango fluid.

Dose one-half to one teaspoonful before meal twice a day.

R

Glycerine acid pepsin.

(*Bullock's*).

Dose one drachm twice a day after meal.

Free hydrochloric acid is absent in atleast 77 per cent. of the cases of gastric carcinoma.—*The Edinburgh Medical Journal*, Vol. i, page 43, 1908.

R

Nepanthe m. v—x in little water to alleviate pain.

R

Cocoa wine to keep up the vitality of the patient.

Treatment of cancer of tongue according to Dr. Robert Bell :

R

Soamin

gr. iii

Dissolve three grains in half a drachm of sterilised water and inject into the muscles of the buttocks once in two days for a month, then suspend the injections for a week and resume them again.

R

Acidi formici

ʒ. ii

50 per cent.

Mellis

ʒ. iv

Aqua

ʒ. ii

Mft. a teaspoonful to be added to a breakfast cupful of water and taken at intervals of one hour every day.

R

Colloids of thyroide

gr. $\frac{1}{2}$

One three times daily about one hour before meals.

Apply a 5 per cent. solution of formalin to the raw surface, but before doing so, make the place anæsthetic by a previous application of a 10 per cent. solution of eucaine, as formalin is bound to give considerable pain. This application could be made if possible every day for three times and afterwards every second day. The crust which will form will come off, leaving a healthier surface, but then it will be necessary to continue the application until the surface becomes healthy, after which it will granulate and heal up. If there is any risk of the teeth irritating the sore, have them extracted without delay. Keep the bowels open every day.

ts.—

The diet should be mostly composed of vegetables and fruits, as much as possible, in an uncooked condition and fresh vegetables are to be preferred to any other kind. Potatoes especially are of great service in such cases and these should be reduced to a pulp and added to soup just before it is to be eaten. The patient should at least take 4 ozs. of food in the course of the day. The object is to retain all the nutritive principles, both of fruits and vegetables, and therefore food should not be subjected to a heat above 120°F. Eggs lightly beaten or switched up in milk uncooked, an abundance of cream, cheese and occasionally a little fowl or fish may be given.

tment of cancer of the breast, lip, &c.—

After oophorectomy the administration of thyroid extract in the shape of elixir thyroid (*Allen and Hanbury*) is recommended, dose being a teaspoonful three times a day for three months.

Six drops of 50 per cent. sol. of formic acid three times a day well diluted with water has been recommended by Bell.

R.

Sodium cinnamate
Aq. distil

gr. i
℥. x

Dose a teaspoonful thrice a day.

4. Infusion of violet leaves is recommended. Pour 50 leaves with stalk in a pint of boiling water ; keep it for 12 hours. In the morning take half of the infusion, and wash the part with other half of the infusion.

It should be continued for months.

Hypodermically:—

1. Inject half a drachm of 50 per cent. solution of formic acid into the centre of the growth under chloroform or local anæsthesia.

Locally :—

1. Roentgen rays or ultra-violet light is efficacious.
2. Chemical caustics *eg.* zinc chloride sol. 20 to 50 per cent. , arsenic paste, &c. are good.
3. Electro-thermic coagulation (Doyen) is very good.

Treatment of intra-abdominal cancer:—

Rx

Methylene blue	gr. ii.
Arsenious acid	gr. 1/20 to 1/40
Strychnine sulph	gr. 1/60
Ext. Belladonna	gr. 1/4

Mft. for a pill. Sig. one twice a day after meal.

Treatment of cancer of uterus:—

Internally:—

I.

Rx

Pulv. acacia	
— tragacanth	a.a. gr. v
Chian turpentine	gr. v
Ether	m. v
Distilled water	qs. to 70 drops.

Dissolve chian turpentine in ether, mix with powders then add water ten drops ; titurate till emulsified , afterwards add water 40 drops.

2. Bell recommends fresh thyroid gland.

Locally:—

1. Curette the unhealthy tissue and introduce tampons saturated with sol. of ichthyol in glycerine.
2. Pessus Trypsin Co. (A and H) to be used night and morning.

Treatment of cancer of rectum:—

Internally:—

R

Liq. Trypsin Co.

3. j—ij

To be taken before meal twice a day

Locally:—

After washing the part antiseptically introduce suppos. trypsin Co.

In conclusion the cancer cell is mightier in its forces than all the Cæsars ; it withstands all the scientific investigation of the ages and refuses all 'cures' but timely surgical interference.

The great lesson which we physicians should learn is that our profession entails a great responsibility. Sacred lives are placed in our keeping and our first duty is to give the best that is in us to the conservation of life and happiness of our patients. If we fully realize this, we would find time to study our cases and treat them properly.

CHAPTER XI.

DISEASES DUE TO ANIMAL PARASITES.

I. Ascariasis :—

i. Ascaris Lumbricoides (*Round worm*)

R

Santonin	gr. ss.i
Calomel	gr. ii
Saccharum Lac.	gr. iv

Mft. for a pulv : Sig. to be taken at bed time, followed by a saline purge in the morning.

N.B.—The dose may be repeated 2 or 3 days if required.

ii. Oxyuris Vermicularis (*Thread worm*.)

Internally:—

R

Santonin	gr. $\frac{1}{4}$
Pulv. Rhei	gr. iii

Mft. for a pulv. : Sig. to be taken every night for a week at least.

Locally:—

1. Injection of half a pint of lukewarm saline solution per rectum is recommended.

2. Enema of half a pint of quassa water is beneficial.

N.B.—In giving the injection care should be taken to elevate the hips so that the fluid can be retained as long as possible.

2. Trichiniasis :—

Trichina Spiralis.

Glycerine has been recommended in large doses, in order that by passing into the intestines it may by its hygroscopic properties destroy the worm.

3. Intestinal Cestodes (*Tape worm*.)

The following rules are worth knowing :—

1. For two days prior to the administration of the remedies, the patient should be on low diet.
2. On the previous night use a purgative to open the bowel.
3. On the subsequent day the patient should be on milk diet.
4. At night he should take a dose of the following :—

R

Ext. fellis liq.	℥. j
Oil turpentine	m. x.
Yolk of one egg :	
Dec : Pomegranate radix :	ad. ℥. j

Dose : at bed time.

5. Next day examine stool for the head of tape worm ; if head be not visible, repeat another dose for next night.

FILARIASIS.

Filaria Nocturna both in its embryonic and in its mature forms seems to be perfectly adapted to live in harmony with its human host. As a matter of fact in the vast majority of instances, it gives rise to no disease whatever. In some cases, however, this harmony is somewhat disturbed and thus grave disease may appear.

The term filariasis means a varicose condition of the lymphatics due to the presence of *F. Nocturna* and includes :—

1. Chyluria.
2. Lymph scrotum.
3. Elephantiasis.
4. Chylocele.
5. Varicose groin glands.
6. Orchitis.
7. Endemic lymphangitis :

iv.

R

Tinc. Ayapan. (Bengal.)	m. x
Hazelline	m. x
Ext. Ergot liq. (Hewlett's).	m. xv
Acid Gallic	gr. x
Ag. Chloroformi	ad $\frac{3}{4}$ i

Mft. for a dose : Sig. One thrice a day.

v. The following indigenous drugs are worthy of a trial : use fresh juices extracted from leaves of Ayapan, 'Durba' 'Arhar' and 'Matee,' of each two drachms : add to them little soaked 'Isharmul,' 'Tese' and 'Cheni.' This should be taken early in morning daily.

vi. Chew fresh twigs of Cinnamon.

vii. Malto-pepsin is good.

Writer's favourite formula.

viii.

R

Acid Nitro-Muriatic (Dil)	m. x
Liq. Strychnine Hydroch	m. ij
Glycerine Acid Pepsin (Bullock's)	℥. i
Dec. Mangrove	ad. ℥. i

Mft. for a dose. Sig. One thrice a day.

Postural treatment :—The recumbent position with raised delvis should be maintained until the urine becomes clear and free from clots and albumin. The object being to lessen the pressure on the vessels of the leaking renal or vesical lymphatic varix.

Dietetic treatment.—

All foods likely to increase chyle such as milk, fat and albuminoids should for a time be avoided. The amount of fluid should be restricted as much as possible, all sorts of vegetables are allowed except papya and plantain.

701 DISEASES DUE TO ANIMAL PARASITES.

2 Lymph Scrotum *z.e.*, exudation of lymph from the scrotum.

Locally:—

R

Tinc. Opil	℥. i
Liq. Plumbi. Subacetatis	℥. iv.
Aq. Distil	ad. ℥. xxiv

Mft. Soak the part constantly.

N.B.—Don't try to dry up the exudation sharp by a powerful dusting powder.

Internally:—

R

Tinc. Aconite	m i
„ Belladonna	m. iii
Liq. Ammon Citratis	℥. ii
Aq. Camphoræ	ad. ℥. i

Mft. for a dose: Sig. one every three hours.

3. Elephantiasis *z.e.*, elephant-like thickening of the integuments of lower extremities ; it begins with an attack of lymphangitis and erysipelatoid inflammation of the skin. Elephantiasis of leg is best treated by rest, elevation, massage and elastic bandage (Martin's perforated rubber bandage).

Internally:—

i.

R

Arsenic Iodide	gr. 1/24
Syr. Trifolium Co.	℥. ii

Mft. for a dose. Sig. one with an ounce of water twice a day after meal.

ii.

R

Methylene blue	gr. i
Pulv. Nutmeg	gr. ii
Mucilage Tragacanth qs.	

Mft. for a pill. Sig. One twice a day.

iii.

R̄

Quinine Salicylas	gr ii
Ext. Opū	gr. ½
Arsenic Iodide	gr. 1/24
Ext. Gentian	q. s.

Mft. for a pill. Sig. One twice a day.

iv.

R̄

Thymol	gr. ii
Bread Crumb	q. s.

Mft. for a pill. Sig. One twice a day.

Locally :—

In vericose elephantiasis a lotion of the following composition is useful in removing the callosities:—

R̄

Acid Salicylic	
Resorcin	a. a. ʒ. j
Spt. Vini. Rect.	ʒ. iv

The writer takes the liberty of quoting the opinions of some of the specialists of the day :—

(a) Dr. Dubriel de Broglia originated a treatment of elephantiasis consisting of the internal administration of 30 drops of tinc. ferri perchloride three times a day, in combination with the bandaging of the affected limbs and complete rest in bed. In every case so treated the patient has shown decrease in the size of the affected part within a few weeks, and the effect on the fever is apparent even sooner. He concludes that tinc. ferri perchloride has a marked effect on the elephantoid process decreasing the size of the affected parts and restoring function to an even greater degree. (*United States, Naval Medical Bulletin July 1909*).

(b) Castellani (*Manual of Tropical Medicine 1910, Page 829*) recommends complete rest in bed, injection of thiosinnamin or fibrolysin and methodical bandaging.

2 to 4 c. c. of fibrolysin (*Merk*) is given daily for 3 to 6 months, the injections being interrupted for a few days from time to time. The injections may be made in the affected parts, or deeply into the gluteal region, where they cause much less pain. After each injection the whole limb is tightly bandaged with flannel bandages, which are held in the place night and day.

4. Chylocele should be treated surgically.

5. Varicose groin glands should be supported by a well-adjusted bandage. These dilated lymphatics are part of a physiologically necessary varix. Their excision has been followed by chyluria or elephantiasis.

6. Orchitis.

Locally :—

i.

R

Cold compress of saturated solution of Mag sulph.

ii. Emplastrum Belladonna fluidum (*Ferris*).

iii.

R

Ichthyol	3. iv
Ext. Belladonna	3. iv
Glycerine	ad. 3. ii

Mft. To apply locally.

iv.

Ichthyol Vasogen (10 per cent).	3. ii
Iodine Vasogen (10 per cent .	3. ii
Lalolin	ad. 3. i

Mft. To apply locally.

v.

R

Plumbi Iodidē	3. i
Ext. Balladonna	3. iv
Vasaline	ad. 3. ii

Mft. To apply over scrotum.

N.B.—After applying the ointment cover the part with oiled silk followed by a suspensary bandage.

Internally :—

R_x

Tinc. Aconite	m. i
Tinc. Pulsetilla	m. ii
Liq. Cinchona hydrobromatis	m. v-x
Aq. Aurantii floris	ad. ℥. i

Mft. for a dose. Sig. One every 3 hours.

7. Endemic lymphangitis.—

Locally :—

*Mix together fine powder of chalk and fresh lemon juice and apply over swollen joints while effervescing.

Internally :—

Quinine salicylas	gr. ii
Arsenic Iodide	gr. 1/24
Aloin	gr. 1/4
Pil Rhei Co.	gr. iiss

Mft. for a pill. Sig. One every hour during remission.

ANCHYLOSTOMIASIS.

Anchyllostomiasis is an insidious wasting disease characterised *clinically* by progressive anæmia, digestive and nervous deterioration and *pathologically* by the presence in the duodenum and jejunum of a blood-sucking rhabditic nematode worm (*anchylostoma duodenalis*) inhabiting earth and muddy water.

It chiefly affects digestive, circulatory and nervous systems.

For practical purposes it is divided into three stages, *viz*:—

1. Dyspeptic.
2. Anæmic.
3. Dropsical.

Classical symptoms of —

i. Dyspeptic stage :—

1. Constant throbbing pain in the epigastrium is the first symptom complained of, it is increased by pressure, but relieved by food.

2. Appetite often ravenous, but this gives rise to dyspeptic trouble *e.g.* colic, diarrhoea.
3. Flatulence the lower abdomen has been mentioned by Dr. Lutz as a common symptom.
4. Temperature usually sub-normal.
5. G. Liston (*Indian Medical Gazette October, 1900.*) has mentioned "spongy gums" as a common symptom. They are due to the absorption of toxins from the intestine, which are excreted by anchylostoma.
6. Taste perverted, geophagy *i.e.* craving for eating earth, mud.
7. Stools reddish brown tinged with half digested blood.
8. Fever may be present, but it is irregular and is of an intermittent type.
9. Sleeplessness, general debility, and impotence are common symptoms.

ii Anæmic stage :—

Face puffy; intense anæmia, eyes show a pearly white conjunctiva, palpitation of heart, hæmic bruit and headache.

Microscopic examination of blood:—

1. No true poikilocytosis as in idiopathic pernicious anæmia.
2. No excessive leucocytosis as in leucocythemia.
3. Hæmoglobin is reduced to a much greater degree than the number of red corpuscles.
4. White corpuscles though absolutely reduced in numbers are relatively to the red, slightly increased being 1 to 300 or 400.

iii. Dropsical stage :—

Œdema and dropsy in various parts of the body are present; œdema of lower extremity first and then spreading œdema of the face and perhaps general anasarca with even marked ascitis though as a rule there is only œdema of the feet, legs and face.

The heart is dilated and there is fatty degeneration of the fibres.

Treatment involves two broad divisions :—

1. Prophylactic.
2. Medical.

i. Prophylaxis.—

•Root out the disease by scrupulous cleanliness, and careful attention to conservancy arrangements. Disposal of night-soil previously disinfected with hydrarg perchloride 1 in 500, or phenyl, is one of the most important means of prevention.

All water which is used even for domestic purposes as well as for drinking should, if possible, be boiled.

Dr. Powell (*Indian medical Gazette*, 1899) recommends chewing of *betel nut* as an excellent prophylactic.

Dr. W. Ginn and Dr. Martin Jacoby in *Berliner Klinische Wochenschrift* No. 36, 1896 remarks—

“Amongst certain tribes of India and Africa there seemed to exist a certain immunity from anchylostomiasis. But the immunity was limited, and by no means absolute.”

Avoid drinking muddy water. Avoid eating earth. Earth-eating is a common practice among the females of Bengal especially during pregnancy. Avoid eating unwashed vegetables. Avoid taking food on unwashed hands, coming straight from tilling contaminated soil.

Medical treatment.—

Radical cure can only be obtained by removal of all the parasites.

The rational treatment is two-fold :—

- i To expel the worms.
- ii To treat the anæmia.

710 DISEASES DUE TO ANIMAL PARASITES.

As soon as the specific treatment for exterminating the parasite is pushed on, patients verging to the grave have at once turned round.

ii. Expulsion of the parasite :—

Thymol is our sheet anchor. It should be finely trituated. Give it in cachet or tabloid. Dose 30 grains.

Method of administration :—

For a day before and a day after the thymol has been administered, the patient is kept on milk diet and soup. At bed time a dose of calomel gr v should be given. The following morning a dose of castor oil, with 5 grains of santonin if there is suspicion of the presence of other worms.

At 8 A. M. 15 grains of thymol in cachet.

At 10 A. M. 15 grains of thymol again.

At 12 NOON. A dose of castor oil.

Toxic symptoms are :—

1. Temperature is lowered 1° or 2° centigrade.
2. Pulse and respiration are slowed.
3. Patient remains for a few hours collapsed, giddy and faint and hence he must be in bed for a few hours.

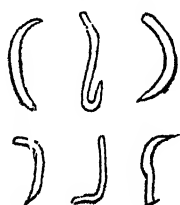
Contra-indications of thymol are :—

1. Excessive debility.
2. Very low temperature.
3. Age above 60.
4. Advanced disease of heart or any other organ.
5. Advanced cases of malarial cachexia or dysentery.

Solvents of thymol must not be prescribed :—

Thymol is soluble in alcohol, ether, oil, turpentine, chloroform, glycerine and certain alkaline solution, hence during the course of treatment don't use these solvents.

ANCHYLOSTOMA DUODENALIS.



ITS OVA. (*A. natural size after Schntthesis.*)



Clear pale bodies which mark both poles of the ova, and the yolk.

Method of detecting anchylostoma duodenalis in the stool :—

1 *Macroscopic.*

Wash the stools and in the residue you will find hundreds of dead anchylostoma after the administration of thymol.

N.B.—After a week examine the stool again for the parasite.

2. *Microscopic.*

Examine the motion for anchylostoma and its ova. A good way of doing this is to dilute a small piece of the motion with a drop of (1 in 20) carbolic acid which removes all smell.

How long to push on thymol :—

So long as the ova are present in the stool. The second course should be given about ten days after the first, and the third a fortnight later.

N.B.—It is seldom necessary to give more than three courses.

Eucalyptus oil and chloroform.

A much less dangerous treatment is by oil of eucalyptus and chloroform, which should be preceded by a saline purgative given a few hours earlier.

The usual formula is :—

R		
	Olei eucalypti	m. xxx
	Chloroformis	m. xiv
	Olei ricini	ʒ. x

One half to be given first thing in the morning, and the other half in half an hour later. It is inferior to thymol treatment, but safer, and can be used several days in succession. (*Manual of Tropical Medicine by Castellani and Chalmers, page 937*).

ii. Treatment of anæmia.

Iron is recommended, and the organic preparation of iron is best.

A list of which is given below :—

1. Hommell's hæmatogen.
2. Vin de hæmoglobin.
3. Peptofer.
4. Iron somatose.
5. Ferratin.
6. Orrifin palatinoid.
7. Algiron tablet.
8. Hæmogallol tablet.

As there are three stages of this disease, I think it is better to say a few words about each.

Dyspeptic stage :—

- i. Expel parasite by thymol.
- ii. Treat colico-enteritis, which is invariably present.

Writer's favourite formula.

R		
	Bismuth carb	gr. x
	Dover's powder	gr. ii
	Sodii bicarb	gr. x

Mft. for a pulv. Sig. One thrice a day.

Anæmic stage

- i. Expel parasite.
- ii. Treat colico-enteritis and anæmia with iron.

Dropsical stage.

- i. Expel parasite very carefully.
- ii. Treat colico-enteritis, anæmia and dropsy.

The best remedy for this is strychnine, digitalis, apocyanum and iron. The writer recommends the following :—

℞

Ext. nux vomica liq.	m. i
Ext. digitalis liq.	m. i
Ext. cinchona liq.	mi. x
Ext. apocyanum	m. v
Ext. punarnava liq.	ʒ. j
Dec. scoparia	ad. ʒ. j

Mft. for a dose Sig. One thrice a day with a dose of iron as mentioned above.

Dietetic treatment —

Mixed diet with meat rice and bread

SLEEPING SICKNESS.

Sleeping Sickness is a parasitic febrile disease caused by *trypanosomata Gambiense* ; it develops in the blood and also in small numbers in the cerebro-spinal fluid. Africa is notorious for this disease.

Classical symptoms are—

1. General œdema, especially of the face and lower eyelids.
2. Irregular attacks of fever which does not yield to quinine.
3. General congestion of the skin with cyanosis in areas and patches of erythema which disappear and reappear.
4. General wasting, muscular weakness, splenic enlargement, increased pulse and respiration.

714 DISEASES DUE TO ANIMAL PARASITES.

Treatment.—

Locally —

Inunction of grey ointment.

Hypodermically:—

(1.) R

Atoxyl

gr. ii

Aq. Distil

m. xx

To be prepared fresh before injection, injected twice a week for 6 weeks.

(11.) R

Arsacetin

gr. ii

Aq. Distil

m. xx

Direction as mentioned above.

INDEX.

Actinomycosis—

Clinical forms	192
Madura foot	192
Pot. Iodide treatment	192

Acute Anterior Poliomyelitis—

Acute stage	658
Bramwell's advice	659, 661
Gower's advice	660
Prognosis	662
Stage of improvement	661
Stationary period	660
Urotropin	660

Addison's disease—

Dietetic treatment	580
Function of adrenalin	577
Its toxic effect	578
Hygienic treatment	580
Medical treatment	576
Specific treatment	577
Symptoms	576

Albuminuria—

Duke's view	495
Nestor Tirard's remark	494
Osler's view	492
Pathological	494
Physiological	492
Theories	494
Treatment	495
ALFAXINES	10

Amyotrophic lateral Sclerosis—

Treatment	676
-----------	-----

Anæmia

Primary anæmia	425
Secondary anæmia	425

Anchylostomiasis

Anæmia	712
Dietetic treatment	713
Eucalyptus oil and chloroform	711
Medical treatment	709
Prophylaxis	709
Symptoms	707
Thymol treatment	710

Aneurism

Balfour's view	423
Electricity	424
Ferri per chloride injection	424
Gelatin injection	424
Loreta's method	424
Treatment	423
Varieties	422

Angina Pectoris

Dietetic treatment	387
Engstad's opinion	386
Guthrie Rankin's prescription	387
Hygienic treatment	387
Lauder Brunton's view	385
Nitroglycerine	385
Prophylaxis	385
Sir Douglas Powell's Counsel	387
Theories	384

Anthrax—

Ipecacuanha	176
Treatment	175
ANTITOXINS	7, 21

Aortic regurgitation—

Balfour's view	410
----------------	-----

Aortic regurgitation—Contd

Causes	409
Clifford Allbutt's view	409
Compensation fails	410
Compensation is well balanced	410
Dietetic treatment	411
Exercise	411
Medical treatment	411
Signs and Symptoms	408

Appendicitis—

A criticism	... 308
Chronic Appendicitis	302
Collargol	306
Dietetic treatment	307
Guaiacol carb	... 304
Ice bag	306
Intestinal antiseptic	304
Leeches	306
Operative interference	302
Opium	305
Signs and symptoms	301
Treatment between the attack	307
Treatment during an attack	303

Arterio-sclerosis—

Akin's method	418
Antisclerosis	418
Climate	.. 421
Dietetic	... 421
Electricity	421
Exercise	.. 421
Gibson's formula	417
Hirschfeld's opinion	420
Huchard's view	415
Hydrotherapy	.. 419
Indications	416
Lauder Brunton's for- mula	.. 418
Light bath	421
Marc-Frenkel's view	419
Massage	.. 420
Mental and nervous excitement	421
Sodii silicate	416

Arterio-sclerosis—Contd

Thoma's opinion	416
Urodonal	419
Von Paul Schenk's view	419

Ascariasis—

Ascaris lumbricoides	700
Oxyuris vermicularis	700

Asthma—

Adrenalin	474, 476
Amylnitrite inhalation	473
Campbell's aphorism	481
Climatic treatment	479
Dietetic	480
Dionin	475
Dixon's view	471
Frances Hare's view	482
Graves' story	472
Hygienic treatment	479
Iodide of Ethyl	... 473
Heroin hydroch	474
Pyridine	473
Rabaghlati's view	482
Revilliod's theory	478
Stramonium Ciga- rettes	473
Viburnum Prunifolium	476

Beri Beri—

Causes	641
Fraser's view	642
Rice theory	642

BLOOD—

Its rouleaux formation	13
------------------------	----

Bright's disease—

Acute uræmia	498
Asthmatic uræmia	499
Cheyne-strokes breath- ing	499
Chart of	518
Chronic uræmia	.. 499
Classical symptoms	497

Bright's disease—Contd.

Dietetic treatment of	
„ Acute Bright's disease	504
„ Granular kidney	514
„ Tubal nephritides	508
Dyspeptic uræmia	499
Granular nephritis	500
Hale white's view	504 & 510
Hygienic treatment	517
Imperial drink	510
Marie's hypothesis	516
Renal asthma	513
Theories of uræmia	500
Treatment of Acute B. disease..	502
Treatment of Chronic interstitial nephritis	509
Treatment of Parenchymatous disease	505
Uræmia	512
Uræmic convulsion	512
Von Noorden's view	507
Warrington's advices	515
West's formula	510
W. Broadbent's view	501
William Gull's opinion	500

Bronchiectasis—

Cocillana...	468
Garlic ..	470
Glassington's formula	469
Medical treatment	468
Picis ..	469
Prophylaxis	467

Bronchitis—

Abortive treatment	444
Antiseptic expectorant	447
Antispasmodic expectorant	449
Bronchi-ectasis with cough ...	448

Bronchitis—Contd.

Flugge's experiment	443
Gouty diathesis	449
Hot foot bath	445
Intra-thoracic congestion ..	449
Medicinal treatment	445
Mouth spray	443
Prophylaxis	444
Sedative expectorant	446
Stimulant expectorant	446
W. Ewart's opinion	444
Wilcox's theory	448
Winslow's view	443

Broncho-pneumonia—

Belladonna treatment	466
Moist crepitations ...	467
Tenaceous expectoration	466

Cachectic fever

Atoxyl injection	130
Bed bug	129
Nuclein	130
Price's opinion	129
Signs and symptoms	129
Soamin injection	130
Sodium cinamate	130

Calculus—

Cystitis	545
Dietetic treatment	547
Fate of	534
Hæmaturia	546
Its treatment	513
Life history of	534
Morris's view	534
Oxaluria	540
Its treatment	542
Phosphaturia	543
Its treatment	543
Prophylaxis	538
Renal colic, treatment of	536
Robert's formula	540

Calculus—Contd.

Signs	536
Symptoms	535
Treatment between the attacks	538
Uric acid diathesis	539
Varieties	535

Carbuncle—

Bier's method	172
Boric compress	172
Brocq's view	174
Carbolic Acid injection	171
Carbolic Glycerine	172
Ceridin pill	174
Collodion	171
Dietetic treatment	175
Hydrogen peroxide	171
Ringer's method	174
Soponis and akoghur	173
Sulphuric acid	174
Wright's method	173
Yeast	173

Carcinoma—

Cancer house	691
Causes from within the body	689
Causes from without the body	690
Geographical distribution	691
Irritation theories	690
Site	691
THEORIES	686
Extrinsic or parasitic	686
Intrinsic	687
TREATMENT	693
„ Cancer of breast	696
„ „ Cervix	698
„ „ Intra-abdominal	697
„ „ Lip	696
„ „ Rectum	699
„ „ Stomach	694
„ „ Tongue	695
„ „ Uterus	697

Cerebro-spinal Meningitis—

Dana's classification	147
Dietetic treatment	196
Lumbar puncture	143, 144
Preventive treatment	140
Schneider's inhalation	141
Serum treatment	143, 144
Therapeutic treatment	141
Urotropin	142
Von Ziemssen's remark	142
Warm bath	142

Chlorosis—

Bi-palatoid of non	429
Chart	426
Iron	427
Landois' view	428
Melland's opinion	430
Muller's theory	428
Ortner's view	428
Serum therapy	431
Treatment	427

Cholelithiasis (Gallstone)—

Belladonna	363
Bilitin	362
Cholelith pill	362
Chologen	363
Dietetic treatment	360
Durand's drop	363
Exalgine	361
Glycerine	364
Heroin hydroch	361
Hygienic treatment	360
L. Brunton's method	360
Oleic acid	362
Olive Oil	362
Probilin	363
Senator's view	363
Sodium glycocholate	362
„ Succinate	364
Symptoms	358
Theories	358
Varieties	358

Cholera—

Camphor in chloroform	54
Camphorated oil injection	60

Cholera—Contd

Cantharidis . . .	62
Copper arsenite . . .	54
Cramps . . .	61
Curative treatment . . .	54
Customs of hill tribes of India . . .	56
Delirium . . .	61
Dietetic treatment . . .	62, 63
Friedbesger view on alcohol . . .	54
Intra-peritoneal injection . . .	58
Inter-venous injection . . .	58
Nitroglycerine . . .	60
Preventive treatment . . .	52
Propagation . . .	51
Rectal injection . . .	57
Spinal ice bag . . .	56
Strychnine . . .	59
Suppression of urine . . .	61
Symptomatic treatment . . .	60
Varieties . . .	51
CYCLE OF LIFE OF THE BACILLUS . . .	50
CHLORETONE IN PHTHISIS . . .	29
„ CHOLERA . . .	55

Chorea—

Bramwell's recommendation . . .	630
Chloretone . . .	630
Causes . . .	628
Gordon Sharp's mixture . . .	629
Hyoscine Hydrobromate . . .	631
Hygienic treatment . . .	632
Moral . . .	632
Symptoms . . .	628
Treatment . . .	629
Varieties . . .	628
Wynter's view . . .	630

Cirrhosis of liver—

Autoserotherapy of Ascitis . . .	376
Calcium hippurate . . .	377
Climatic change . . .	380
Dietetic treatment . . .	380

Cirrhosis of liver—(Contd.)

Fibrolysin . . .	377
Hanot's view . . .	373
Hepatic Extract . . .	377
Injection of adrenalin . . .	376
Varieties . . .	371
COD LIVER OIL IN TUBERCULOSIS . . .	25
Constipation—	
Abbott's rule . . .	326
Agar agar treatment . . .	320
Atonic stage . . .	318
Caey's view . . .	320
Citrated milk . . .	324
Classification . . .	314
Cold abdominal massage . . .	319
Hazzard's method of abdominal massage . . .	319
Hilton's method of exercise . . .	318
Indication for treatment . . .	316
Lactic acid bacilli . . .	324
Spastic stage . . .	318
Whole-meal bread . . .	320
Wilkinson's opinion . . .	322

Coryza—

Adrenalin . . .	440
Menthol and chloroform . . .	440
CREASOTE IN PHTHISIS . . .	25

Defective pancreatic secretion

Pancreatic preparations . . .	586
Symptoms . . .	586
Young's experiment . . .	587

Dengue fever—

Classical symptoms . . .	195
Medical . . .	195
Prophylaxis . . .	195

Diabetes—

Theories . . .	247
Treatment . . .	247

Diabetes Mellitus—

Alfred King's theory . . .	217
Bruck's remark . . .	223
Claude Benard's puncture . . .	220
Chundra's prescription . . .	222

Diabetes Mellitus—(Contd.)		Dilatation of Stomach—	
Coma	229	Atonic dilatation	298
Dietetic treatment	234	Broadbent's formula ..	299
Dieulafoy's formula	224	Magnesium perhydriol	
Diet as sketched by Pavy	244	tablet	299
Diet as sketched by		Obstructive dilatation	298
Williamson	245	T. Clifford Allbutt's	
Electric treatment	232	view	297
Entremets	241	Diphtheria—	
Frerich's remark	217	Collapse treatment of	167
Haig's theory	215	Dietetic	167
Hygienic treatment	232	Formaldehyde	165
Manfred Frænkel's		Hydrogen peroxide sol.	
theory	216	spray	166
Pavy's theory	215	Hygienic treatment	167
Psychic treatment	232	Pineapple juice	167
Robert Sandby's remark	237	Prophylaxis	164
Rudisch's remark	223	Serum injection	164
Symptoms	220	Trichloro acetic acid	165
Tirard's view	231	GUTHRIE RANKIN'S FOR-	
Trypsogen	223	MULA	294
Von Noorden's oatmeal		Duodenal ulcer—	
diet	237	Chronic cases	295
„ Theory	216	Einhorn's classification	293
Diarrhœa—		Grave cases	293
Biliary diarrhœa	337	Mild cases	293
Cardinal points	328	Dysentery—	
Causes of	328	Argenti nitras irrigation	71
Chronic diarrhœa with		Castor oil emulsion of .	69
watery stools ...	338	Causes of	64
Cold	336	Chronic form	69
Decomposed food	330	Colon irrigation	71
Dietetic treatment	340	Dietetic treatment	73
Hill diarrhœa	333	Harris's method	72
Infantile diarrhœa	331	Hygienic treatment	73
Locomotor ataxia .	337	Liver cases	67
Malarial diarrhœa .	337	Malarial cases	67
Malignant disease .	337	Old method of ipeca-	
Microbic infection	330	cuanha treatment	66
Morning diarrhœa .	337	Pregnancy .	68
Nervous	336	Prophylaxis ...	64
Prandial diarrhœa .	336	Rectal enema	68
Prolapse of sigmoid flexure		Saline treatment .	66
into the rectum ..	337	Scorbutic cases	67
Raw meat juice .	340	Serum treatment ..	69
Septic diarrhœa	330	Shiga's rules .	69
Sprue .	339	Spongio piline	69
Summer diarrhœa ...	333	Vaccine treatment .	72
Uræmia ...	336		

Dyspepsia—

Builey's formula	271
Cellasin	277
Enzyme cordial	272
Fenwick's view	277
Hirsch's view	281
Hopgan	273
Hydrogen peroxide	274
Imhof's theory	278
Joslin's view	274
Lavenson's remark in atonic dyspepsia	271
Lavage	280
Lime juice and pepsin	277
Pineapple juice	281
Physiology of appetite	268
Rosenberg's view	279
Savill's view	273
Spiggs' view	268, 269
Urotropin	279
Varieties of	270

Eczema—

Treatment	... 533
-----------	---------

Emphysema—

Atrophic	484
Dietetic treatment	485
Hygienic treatment	485
Hypertrophic	484
Oxygen inhalation	485
Signs	483
Symptoms	484
Varieties	484

Endocarditis—

Aconite	393
Benzoate of soda	393
Canton's method	394
Dietetic treatment	395
Hydriarg oleatis	394
Hygienic treatment	395
Ice bag	394
Leeches	394
Nuclein	393
Prophylactic treatment	392
Salicylate	393
Serum treatment	393
Sulphocarbolate	393
Symptoms	392

Epidemic dropsy—

Dietetic treatment	645
Hygienic treatment	645
Symptoms	643
Treatment	644

Epilepsy

Biometone	624
Bromopin	624
Brown-squard's prescription	622
Champhor monobromata	624
Dietetic treatment	626
Hygienic treatment	627
Hypnotism	625
Sajous's theory	625
Surgical treatment	626

Erysipelas—

Carbolic collodion painting	180
Dietetic treatment	183
Ecthol	179, 180
Hygienic treatment	183
Lucien's method	180
Medicinal treatment	179
Serum treatment	181
Symptoms	178
Tucker's method	180

Exophthalmic Goitre—

Möbius's theory	572
Treatment	573

Facial Paralysis—

Causes	649
Remember	650
Seats of lesion	648
Symptoms	648
Treatment	649

Fever—

Food value in	14
Its kinds	1
Pathogeny of	1
Sajous's theory	1

Filariasis—

Chylocele	706
Chyluria	702
Dietetic treatment	703
Elephantiasis	704

Filariasis—(Contd.)

Endemic lymphangitis	707
Lymph scrotum	704
Medical treatment ..	702
Orchitis .	706
Postural treatment ..	703
Prophylaxis	702
Symptoms .	702
Varicose groin glands	706

Fissures and erosions of the anus—

Emolentine ointment	347
Ichthyol ..	347
Silver nitrate	347

Gastralgia—

Boinyval ...	296
John Aulde's rule	297
Solanin	296
Symptoms	295

Gastric ulcer—

Antilytic serum	289
Cardinal symptoms ...	284
Dujardin-Beaumetz's enema ...	285
Escalin .	288
Gelatin ...	292
Glycozone .	288
Julius Dreschfeld's view	284
Lenhartz's diet chart ..	287
Mayo's view	283
Osler's menu of diet	287
Rectal feeding	285
Sugar solution	286
Surgical treatment ...	292
Symptomatic treatment	290
Von Pfungen's egg treatment	286
Willcox's formulæ	289

Glanders—

Classical symptoms ...	198
Treatment ..	198

Goitre—

Murray's view	571
Parathyroids	571
Treatment ..	572

Gonorrhœa—

Antigonococci serum	556
Airhovin ...	552
Airheol	552
Arthritic rheumatism	554
Chordee	553
Cystitis	554
Dietetic treatment	556
Epididymitis	554
Gonoson	552
Hæmaturia	554
Hygienic treatment ...	556
Injection of	550
Painful micturition	553
Prophylaxis ..	548
Sandalwood oil	551
Santyl	552
Santal midy	552
Stricture .	555

Gout—

Baths	205
Chronic .	210
Dietetic treatment	203
Gaird's view	204
Huchard's remark ..	200
Hygienic treatment	202
Lauder Brunton's view	207
Luft's remark .	206
Medical treatment	206
Pathogenesis	200
Purin free diet .	203
Robert's table ..	205
„ prescription	206
Robin's view	204
Sodium salt ..	210

Hæmaturia—

Adrenalin	523
Calcium chloride ..	523
Carnot's treatment	523
Causes	520
Dietetic treatment .	524
Hygienic treatment .	524
Medical treatment .	522
Tuttle's view	523
Woldert's opinion .	523

Hæmophilia—

Treatment ..	214
--------------	-----

Hæmorrhoids—

Adrenalin ointment .	345
Cold compress .	344
Collodion painting .	346
Dietetic treatment	346
Hot fomentations	345
Injection of ...	346
Pearce Gould's opinion	345
Silver nitrate painting	346

Hemiplegia—

Localisation of lesion	681
Treatment .	683

Hereditary Ataxia—

Exercise .	671
Treatment	671

Whooping Cough—

Abdominal belt .	148
Ander's method of treatment	150
Aristochin	150
Asaprol	147
Catarrhal stage	147
Citric acid	151
Dietetic treatment	151
Paroxysmal stage	149
Pertussin	150
Quinine	149
Sulphur disinfection	148
Syringing ear	148
Warm bath .	151

Hydrophobia—

Inoculation .	199
Classical symptoms	198
Treatment	199

Hysteria—

Dietetic treatment .	597
Faith	592
Hunt's voice training	596
Hydro-therapeutics	591
Kebbell's advice	595
Medical treatment .	593
Mullick's suggestion	596
Preventive treatment	591
Psychical treatment .	589
Rest cure .	591
Suggestion	590

Hysteria—(contd)

Suppression	590
Weir-Mitchell's method	590

Icterus Gravis—

Symptoms .	357
Treatment	357

Icterus Neonatorum—

Causes .	356
Treatment	357

Idiopathic atrophy —

Treatment	679
-----------	-----

Immunity—

Active and passive	5, 6
Chart of	9
Nature and variation of	4
Principles and problems	2
Theory of	10

Impotence—

Causes of	528
Mookavvee Palatinoid	529
Yohimbinae hydroch	528

Infantile Liver—

Butter milk	382
Cognac .	382
Gibbon's opinion	381
Red bone marrow	383
Virol .	383
INFANTILISM	580

Influenza—

Brainerd's view	162
Dover's powder .	162
Foot bath	163
Hare's method	162
Mode of invasion	161
Oil of eucalyptus	163
Salicylate	162
Symptoms	161
Tinc quinine ammon	163
Warmth	163

Jaundice—

Ammon chloride	351
Catarrhal Jaundice	347
Dietetic treatment	355
Enema ..	353

Janudice—(contd.)

Fellis Bovini purificati	353
Hygienic treatment	356
Nitromuriatic acid bath	355
Ovogal	353
Pilocarpinæ nitratis	354
Shoemaker's view	353
Subacute cat. jaundice	354
Theories	347
Varieties	348
LACTALEXINE	10

Lardaceous disease of the kidney

Symptoms	519
Treatment	519

Laryngitis—

Acute	411
Carbolic and eucalyptus spray	441
Chloretone inhalent	442
Chronic	411
Strychnine	442
Voice tabloid	442

Leprosy—

Antileprol	186
Chaulmoogra oil	186, 187
Chinosol	186
Dietetic treatment	189
Gurjan oil	187
Hygienic treatment	189
International conference	189
Nastin treatment	189
Palliative	185
Prophylaxis	184
Pyrogallic ointment	186
Serum treatment	188
Types	184
Unna specific ointment	186

Leukæmia—

Lymphatic	438
Spleno-medullary	438
Symptoms	439
Treatment	439

Locomotor ataxia—

Ataxic stage	663
Dietetic treatment	670
Fränkel's method	667

Locomotor ataxia—(contd.)

History of syphilis	665
Hygienic treatment	670
Medical	664
No history of syphilis	666
Paralytic stage	664
Preataxis stage	663

Lupus vulgaris

Blue light treatment	49
Pyrogallic	48
Thiosinamin injection	49
Thyroid extract	48
Tuberculin injection	49

Malaria—

American method of treatment	120, 122
Attack of fever	107
Black water fever	127
Calcium sulphide	112
Cassia beareana	128
Celli's method	113
Combrel decoction	128
Cycle of Golgi	109
parasitic life	109
Darkness treatment	120
Dietetic	126
Hare's method	114
Koch's method	113
Phenocoll treatment	120
Prophylactic	111
Therapeutic	114
Treatment during fever	116
remission	117
Varieties of parasite	110
Waugh's view	115

Malta fever—

Classical symptoms	197
Treatment	197
Zammit's remark	197

Masturbation—

Moral treatment	527
Nervous, mental effect	526
Spinal bath	527

Measles—

Formamint tablet	158
Hydrogen peroxide	158

Measles—(Contd)

Medicinal treatment	159
"Nore" leaves	159
Prophylactic ..	158

Mitral regurgitation—

Apocyanum ..	403
Dietetic treatment .	405
Diuretin ..	403
Exercise ..	399
Gibson's view ..	401
Mitchell Bruce's view..	402
Nauheim saline bath ..	397
Oertel's method .	397
Schott's treatment	397
Schott-Nauheim treat- ment ..	398
Signs ..	395
Stage of broken com- pensation	400

Mitral stenosis—

Broadbent's method	407, 408
Dietetic treatment .	408
Samuel Wilk's opinion	407
Symptoms	406

Multiple sclerosis—

Causes .	679
Symptoms ..	679
Treatment .	680

Myelitis—

Causes .	652
Classification .	651
Convalescence ...	656
Dietetic treatment	657
Hygienic ...	657
Medical ..	653
Special symptoms .	652
Symptoms	652

Myxœdema—

Dietetic treatment .	576
Flouin's opinion .	575
Hygienic treatment ..	575
Medical „ ..	574
Thyroid „ ...	574

Neuralgia—

AIR INJECTION	614
Alcohol injection	614
Antinervine .	610
Castro's method .	616
Exalgin ..	610
Hydro-therapy ..	612
Loomis's view .	609
Orb's method	615
Savill's prescription	610
Shoemaker's method	616
Varieties	613

Neurasthenia—

Bartholow's description	597
Bornyval .	603
Bromipin .	604
Causes .	599
Colour treatment ..	607
D'Aulnay's method .	605
Diagnosis ..	598
Dietetic treatment	608
Formic acid	603
Grasset's advices	609
Hygienic treatment	607
M. Plavfall's method	602
Moral treatment ..	606
Music treatment ..	607
Neuripin ..	604
Osler's remark .	597
Prognosis ..	598
Symptoms ..	598
Treatment .	601
Zenner's advices	608

Nocturnal Enuresis—

Dietetic treatment .	531
Hygienic „	531
Treatment ...	530

Obesity—

Albu's view	254
Dietetic treatment .	253
Drinks ..	252
Dry cure .	251
Exercise ..	251
Galen's view ..	252
Harold Brown's experi- ment .	256
Hot air and vapour baths	252

Obesity—(Contd.)

Hygienic treatment	251
Smellan's plan of fasting	256
Sweating process	252
Treatment	249
Von Noorden's classification	248

Opsonins 12**Orchitis—**

Causes of	531
Cold compress	532
Hot fomentation	532
Paint	532
Treatment	532

Pancreatic calculus—

Symptoms	365
Treatment	365

Paralysis agitans—

Curative	632
Duboisine sulph	633
Formic acid	633
Gower's formula	633
Hyoscine hydrobromate	633
Palliative	633
Prophylaxis	632
Sodium borate	633

PARATYPHOID 96**Pericarditis—**

Belladonna poroplaster	390
Blister	389
Byrom Bramwell's view	389
Broadbent's view	391
Cold application	390
Dietetic treatment	392
Hygienic treatment ...	391
Lee's view	389
Sibson's view	391
West's theory	390

Peripheral neuritis—

Causes	638
Curative	638
Dietetic treatment	641
Hygienic treatment	640
Prophylaxis	638
Symptoms	627

Peritonitis—

Colloidal silver	341
Crede's ointment	342
Hydrag ointment	342
Varieties	341

Pernicious anæmia—

Aplastic	432
Chart	400
Dietetic treatment	435
Discussion between Dr Hale White and Dr Cabot	433
Hunter's theory	433
Hygienic treatment	435
Hyperplastic	432
Oxygen inhalation	435
Phosphorus	402
Psychical treatment	435
Red bone marrow	434
Serum treatment	434
Transfusion of blood	434
Treatment	433

Phagocytosis diminished by**Pharyngitis—**

Acute form	267
Chemical treatment	267
Chronic form	267
Inhale vapours of	268
Mechanical treatment	267
Suck pestil or tabloid	267

Plague—

Anti-plague serum	136
Buchanan's opinion	134
Carbon dioxide poisoning ...	132
Cordon's conclusion	134
Cyllin treatment	135
Dietetic treatment	139
Formalin	137
Hygienic treatment	139
Injection	137
James Cantile's statement	134
Liq iodine trichloride	135
Manson's method	134
Pneumonic plague	138
Prophylaxis	133

Plague—(Contd.)

Schafer's remark	138
Sodium cinnamate	137
Therapeutic	134

Pleurisy—

Acute	486
Air injection	490
Auto-serotherapy	489
Barr's remark	490
Chronic	486, 489
Cook's method	490
Dietetic treatment	491
Dieulafoy's view	490
Fibrolysin	490
Hare's formula	488
Hygienic treatment	491
Lung gymnastic	489
Nitrogen injection	491
Paracentesis	489
Pilocarpine	488
Proto-nuclein	490
Quinine salicylas	487

Pneumonia—

Aerotherapy	455
A McPhedvan's defn	449
Broadbent's view	451
Calcium chloride	454
Creasotal	455
Dietetic treatment	464
Eyre's view	458
Franklin's view	455
Hektoen's „	451
Hydrogen peroxide	462
Hydrotherapy	455
Hygienic treatment	465
Iodo ferratose	463
Jurgensen's view	455
Medicinal treatment	453
Osler's opinion	454, 450
Prophylaxis	453
Rosenau's theory	450
Serum treatment	457
Theosinamine	461
Terebinth injection	456
Toxæmia	452
Triple arseniate	463
Vaccine treatment	457
W. Gull's experience	461

Pneumonia—(Contd.)

Wolff's remarks	451
-----------------	-----

Progressive Bulbar paralysis—

Treatment	675
-----------	-----

Progressive hereditary muscular atrophy—

Treatment	676
-----------	-----

Progressive muscular atrophy—

Treatment	676
-----------	-----

Progressive muscular dystrophy—

Treatment	678
-----------	-----

Progressive Ophthalmoplegia--

Symptoms	675
Treatment	675

Pseudo muscular dystrophy—

Classical symptoms	677
Pathology	678
Treatment	678
PSEUDOTYPHOID	97

Purpura

Treatment	211
-----------	-----

Pyuria—

Inflammation of	524, 525
Treatment	525

Relapsing fever—

Treatment	196
-----------	-----

Rheumatism—

Asperin	99
Betol oil	100
Bier's hyperemia treatment	104
Chelsea pensioner's prescription	103
Chronic rheumatism	103
Colchisal capsules	100
Garrod's opinion	98
Hyper-pyrexia	102
Hypodermic treatment	101
Mag. sulph lotion	100
Mesotan	101
Sajena juice	103

Rheumatism—(Contd.)		Small-pox—(Contd.)	
Sea bath	103	Vaccination	152
Sodii salicylas mixture	99	Von Hebra's method	157
Rheumatoid Arthritis—		Sore throat—	
Dent's formula	258	Berliner's method	440
Dietetic treatment	259	Protargol treatment	440
Hygienic	259	Spastic paraplegia—	
Medical	258	Osler's classification	671
Thymus	258	Treatment	672
Rickets—		Sporadic cretinism—	
Albulactin	583	Osler's remark	581
Causes	583	Ryman's advice	583
Curative treatment	584	Sajous's view	582
Medical treatment	585	Symptoms	581
Preventive	583	Treatment	581
Sea water injection	585	Stomatitis—	
Sarcoma—		Acid gargle	261
Coley's fluid	685	Alkaline gargle	262
Scarlet fever—		Cancrum oris	263
Dietetic treatment	194	Dietetic treatment	261
Ear complication	194	Formamint tablet	263
Gordon's experience	194	Hygienic treatment	260
Hydrogen peroxide	194	Medicinal	261
Hygienic treatment	195	Miller's estimation	260
Miller's view	194	Osler's view	261
Nose complication	194	Syphilis—	
Symptoms	193	Aix-La-Chapelle method	562
Throat complication	194	Antisyphilitic vaccination	565
Variety	193	Arylarsonate salts	560
Scurvy—		Cobalt blue glass	558
Cause	212	Dietetic treatment	566
Classical symptoms	213	Gower's view	558
Dietetic treatment	214	Hallopean's method	560
Hygienic	214	Henry Lee's opinion	558
Prophylaxis	213	Hygienic treatment	566
SEPTICÆMIA	169	Injection	559
Sleeping sickness—		Inunction	559
Symptoms	713	Louis Gross's theory	560
Treatment	714	Macy Brook's formula	559
Small-pox—		Pernet's view	563
Alcohol	156	Principle of hemolysis	568
Cocoanut water	157	Reaction of fixation	567
Dietetic treatment	157	Rheumatism	565
Hygienic	154	Ricord's view	558
Light	154	Secondary stage	562
Thiosinamin	157		

Syphilis—(Contd.)

Serum treatment ..	564
Tertiary stage ..	563
Vapour bath ..	559
Wassermann reaction ..	567
Wiesbaden method ..	562

Syringo-myelia—

Treatment ..	674
--------------	-----

Tetanus—

Anti-tetanus dusting powder ..	168
Anti-toxin treatment ..	168
Dietetic treatment ..	169
Hygienic ..	169
Spasm ..	168
Symptoms ..	167

Tonsillitis—

Aconite ..	265
Aspirin ..	265
Guaiacum lozenges ..	265
Medicinal treatment ..	265
Preventive ..	265
Surgical	266
Symptoms ..	264
TRICHINIASIS ..	700

Tropical Hepatitis—

Acute hepatitis ..	366
Benzo-naphthol ..	368
Dietetic treatment ..	371
Hygienic ..	370
Ipecacuanha ..	367, 368
James cantlies formula ..	368
Liver abscess bursting into the intestine ..	370
Liver abscess bursting into the lung ..	369
Prophylaxis ..	367
Suppurating nepatitis ..	366

Tuberculosis—

Anderson's view regarding fever ..	32
Aurvedic method of open air treatment ..	45
Avian and human ..	18
Brehmër tripod ..	24
Cornet's view ..	21

Tuberculosis—(Contd.)

Curative treatment ..	23
Diagnosis of ..	21
Dietetic treatment ..	41
Human and bovine ...	17
Hygienic treatment ..	44
J. Montelve plantain juice treatment ...	43
Lactic acid treatment ...	32
Lardner Green's formula ..	28
Light treatment ..	45
Medicinal treatment of Phthisis ...	24
Mircoli's theory of alcohol ..	42
Nuclein, its action ...	26
Open air treatment ..	45-47
Osler's view ...	35, 41
Pottinger's view ..	20
Preventive ...	22
Symptomatic treatment of Phthisis ..	29
TUBERCULIN TREATMENT ..	34
Dosage of ..	38
Injection of ..	35
Koch's view ..	34
Methods of use ..	36
Results of ..	39
Site of injection ..	40
Varieties ...	37
Urea ...	25
White plague ..	24
Will power ..	30, 32
Zickgraf's view ..	27
Zomol ..	42

Tubercle Bacillus—

Its life outside of the human body ...	18
Its enemies ..	20

Typhoid fever—

Abbott's sulphocarbolate Co pill ...	80
Acetozone treatment ...	84
Adrenalin chloride sol ..	85
Burney Yeo's chlorine mixture ...	80
Cold bath ...	82

Typhoid fever—(Contd)

Curative treatment ...	78
Cycle of typhoid bacillus ...	75
Dietetic treatment .	92
Guaiacol ..	82
Jenner's method .	84
Kolpiuski's calcium arsenite sol	81
Lactophenin	7
Massachusetts's Hospital diet chart .	94
Nucleinate of sodium	90
Olive oil . .	84
Paratyphoid .	96
Pseudotyphoid	97
Preventive treatment .	78
Serum ,	87
Symptomatical ,	88

Typhoid fever—(Contd)

Typhoid bacillus and bacterium coli com- mune compared .	76
Use of antiseptic ..	77
Urotropin	89
Varieties of .	77
Wasselji's view ..	83
Widals reaction ...	95
Ziemssen's method of camphor oil injection	91
TYPHO-MALARIAL	97
UREA IN PHTHISIS ...	25
VACCINE	7, 176
Vertigo—	
Causes .	635
Treatment	636
Yellow fever	
Treatment ..	196

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